ORDER NO. ARD83060249A2-02

Service Manual

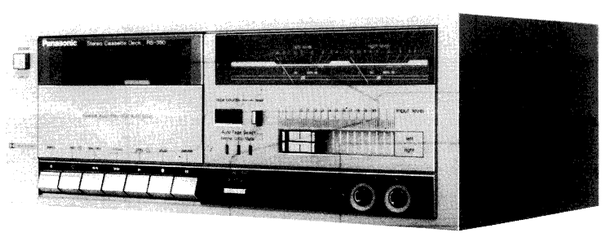
Cassette Deck

RS-350

(Silver Face)

Soft-Touch Cassette Deck with Auto Tape Selector

DOLBY SYSTEM



This is the Service Manual for the following areas.

D ..... For all European areas except United Kingdom.

RS-M24 MECHANISM SERIES

- RS-350 is similar model to RS-3.
- Please use this manual together with the service manual for model No. RS-3 [Original (for the D mark areas "Silver Type")] order No. ARD82120206C8-10.
- This Service Manual indicates the main differences between; RS-3 [Original (for the D mark areas "Silver Type")] and RS-350.

Specifications

Track system:	4-track 2-channel stereo recording and playback	Inputs:	MIC; sensitivity 0.25mV, applicable microphone impedance 400Ω—10kΩ LINE; sensitivity 60mV, input impedance 47kΩ or more
Tape speed:	4.8cm/s		
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)		
Frequency response:	Metal tape; 20—17,000Hz 30—15,000Hz (DIN) CrO_2 tape; 20—16,000Hz 30—14,000Hz (DIN) Normal tape; 20—15,000Hz 30—13,000Hz (DIN)	Outputs:	LINE; output level 400mV, output impedance 2kΩ or less
		Bias frequency:	80kHz
		Heads:	2-head system 1-MX head for record/playback 1-double-gap ferrite head for erasure
Signal-to-noise ratio:	Dolby* B NR in; 67dB (CCIR) NR out; 57dB (Signal level = max. input level A weighted, CrO_2 type tape)	Motor:	1-motor system
		Power requirements:	AC; 110/125/220/240V, 50—60Hz Preset power voltage 220V
		Power consumption:	15W
Fast forward and rewind time:	Approx. 90 seconds with C-60 cassette tape	Dimensions:	31.5cm(W)×12.4cm(H)×24.8cm(D)
		Weight:	3.2kg

Design and specifications are subject to change without notice.

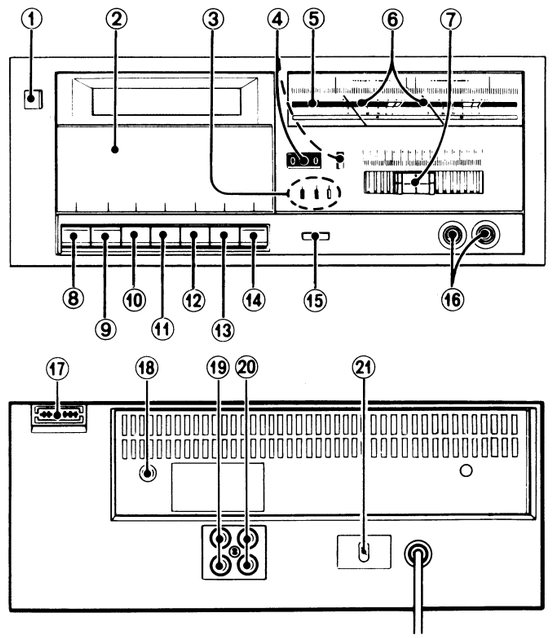
* Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

RS-350

LOCATION OF CONTROLS AND COMPONENTS



① Power Switch [power (push on)]
② Cassette Holder
③ Tape Indicators [Auto Tape Select (Normal • CrO_2 • Metal)]
④ Tape Counter and Reset Button [tape counter-reset]
⑤ Recording Indicators [rec]
⑥ VU meters [left level • right level]
⑦ Input Level Controls [input level (left • right)]
⑧ Eject Button [eject (▲)]
⑨ Record Button [rec • ⊡ (○)]
⑩ Rewind/Review Button [rew/rev (◀◀)]
⑪ Fast Forward/Cue Button [ff/cue(▶▶)]
⑫ Play Button (play • ⊡ (▶)]
⑬ Stop Button (stop (■)]
⑭ Pause Button [pause (❚❚)]
⑮ Dolby Noise-Reduction Switch [Dolby NR (■ out • ▬ in)]
⑯ Microphone Jacks [mic (L • R) (Auto Input Select)]
⑰ Direct Connector
⑱ Stabilizing Pin
⑲ Line Input Jacks [LINE IN (R • L)]
⑳ Line Output Jacks [LINE OUT (R • L)]
㉑ AC Power Voltage Selector

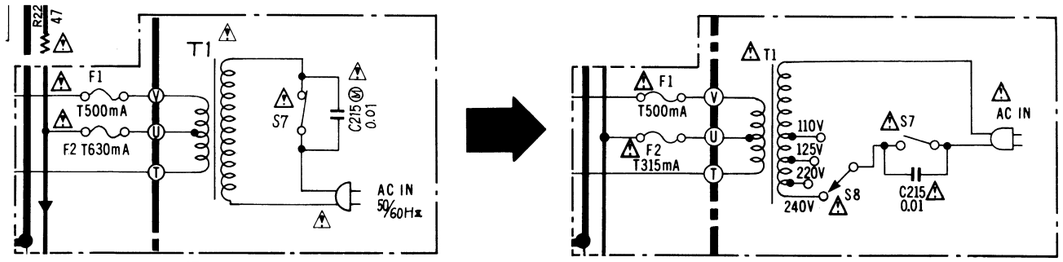
PARTS COMPARISON TABLE:

Please revise the original parts list in the Service Manual [RS-3 (for the D mark areas "Silver Type")] to conform to the changes shown herein.
If new part numbers are shown, be sure to use them when ordering parts.

- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components, use only manufacturer's specified parts.

Ref. No.		Part Name & Description	Part Numbers		Remarks
			RS-3 model For the D mark areas "Silver Type"	**RS-350 model "Silver Type"**	
M86		Chassis Cover Assembly	QXH0357H	**QXH0357H1**	
T1	⚠	AC Power Transformer	QLPD72EKE	**QLPD78EKE**	
F2	⚠	Fuse	XBAQ0008 (T630mA)	**XBAQ0006 (T315mA)**	
S8	⚠	Rotary Switch (AC Power Voltage Selector)	——	**QSR1407H**	Added
G8	⚠	Terminal	SJT777	——	Deleted
G18		Level Meter	QSL2010RNM	**QSL2014RNM**	
G31	⚠	AC Power Cord	SJA88	**RJA23YA-K**	
G32		Main Case	QKMM0042S	**QKMM0042H**	
G37		Switch Shelter	QGKM0182	——	Deleted
G50		Washer	QBK7178	——	Deleted
G60		Cassette Lid Assembly	QYFM0065	**QYFM0070**	
G63		Main Name Plate	QGSM0186	**QGSM0197**	
G79	⚠	Nylon Coupler	——	**QJT1079**	Added
A2		Instruction Book	QQT3413	**QQT3524**	
P1		Inner Carton	QPNM0196	**QPNM0205**	

SCHEMATIC DIAGRAM (DIFFERENCE)

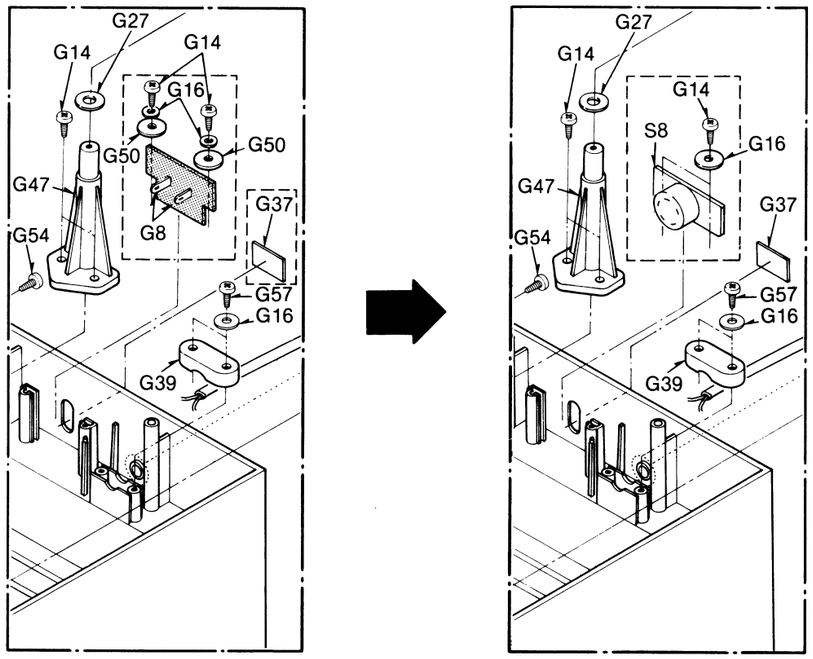


* RS-3 model (D mark areas)

* RS-350 model

CABINET PARTS LOCATION

(DIFFERENCE)

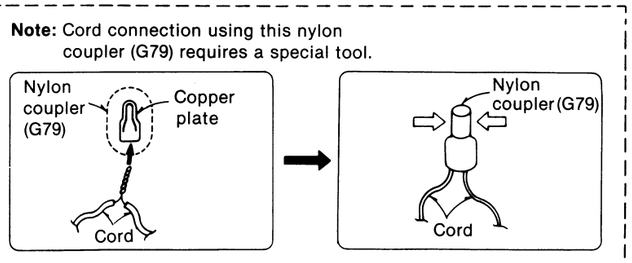


* RS-3 model (D mark areas)

* RS-350 model

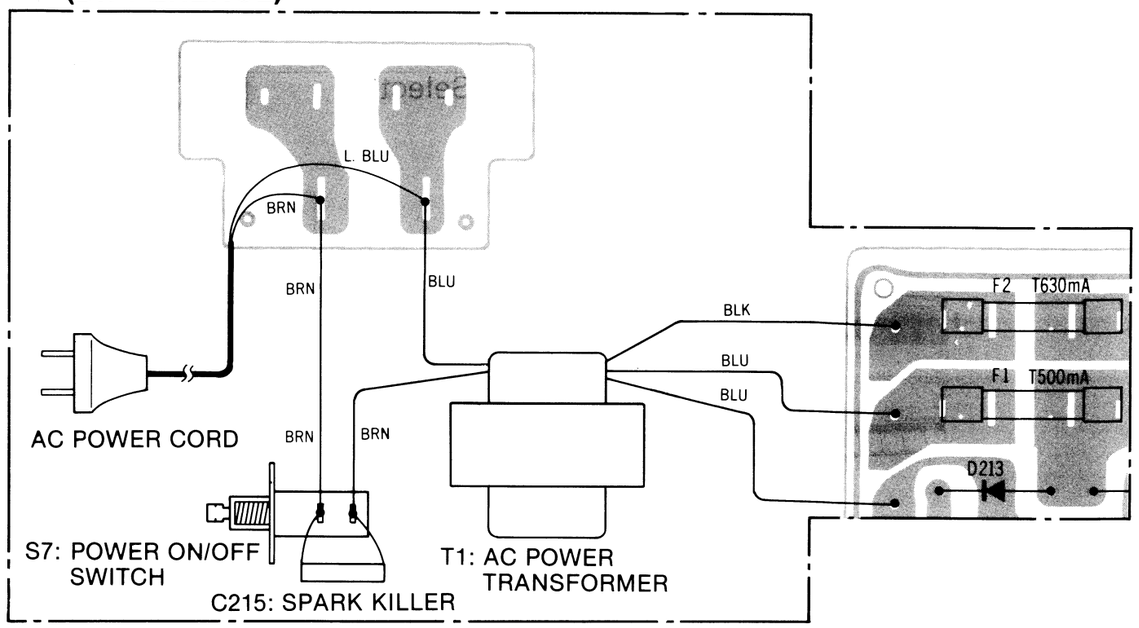
(ADDITION)

Note: Cord connection using this nylon coupler (G79) requires a special tool.

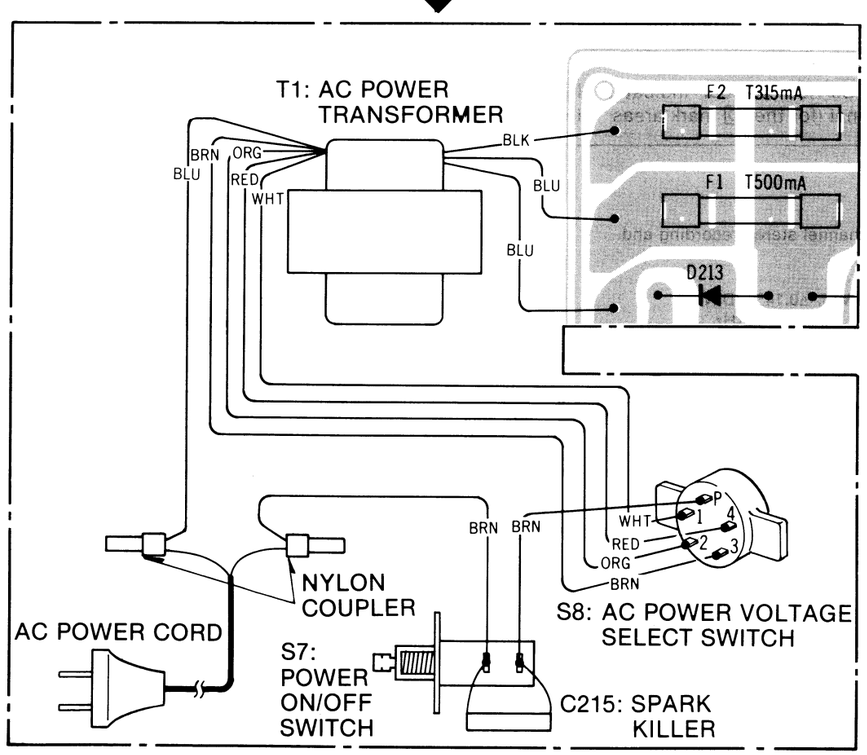


CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

(DIFFERENCE)



* RS-3 model (D mark areas)



* RS-350 model

MNE
H.M D
Printed in Japan

ORDER NO. ARD82120206C8-10

Service Manual

Cassette Deck

RS-3

(Silver Face
Black Face)

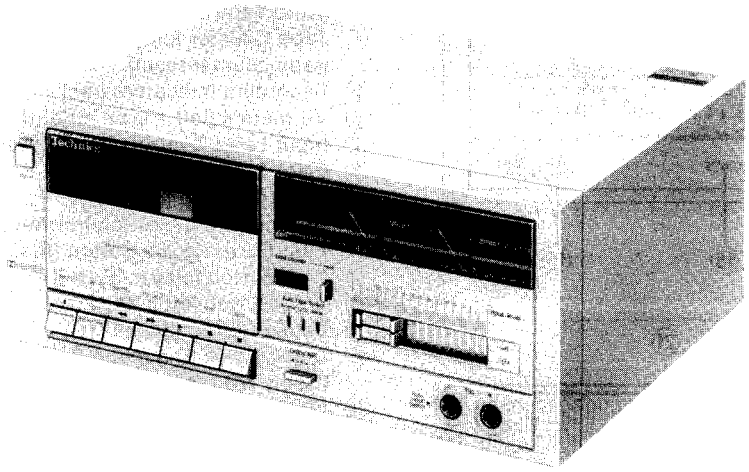
Soft-Touch Cassette Deck with Auto Tape Selector

DOLBY SYSTEM

This is the Service Manual for the following areas.

[D] ..... For all European areas except United Kingdom.

[N] ..... For Asia, Latin America, Middle East and Africa areas.



RS-3 in black is also available is some countries.

RS-M24 MECHANISM SERIES

Specifications

Track system:	4-track 2-channel stereo recording and playback
Tape Speed:	4.8cm/s
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)
Frequency response:	Metal tape; 20—17,000Hz 30—15,000Hz (DIN) CrO_2 tape; 20—16,000Hz 30—14,000Hz (DIN) Normal tape; 20—15,000Hz 30—13,000Hz (DIN)
Signal-to-noise ratio:	Dolby* B NR in; 67dB (CCIR) NR out; 57dB (Signal level = max. input level A weighted, CrO_2 type tape)
Fast Forward and rewind time:	Approx. 90seconds with C-60 cassette tape
Inputs:	MIC; sensitivity 0.25mV, applicable microphone impedance 400Ω—10kΩ LINE; sensitivity 60mV, input impedance 47kΩ—or more
Outputs:	LINE; output level 400mV, output impedance 2kΩ or less
Bias frequency:	80kHz
Heads:	2-head system 1-MX head for record/playback 1-double-gap ferrite head for erasure
Power requirements:	[D]...AC; 220V, 50—60Hz [N]...AC; 110/125/220/240V, 50—60Hz Preset power voltage 240V
Power consumption:	[D]...15W [N]...11W
Dimensions:	31.5cm(W)×12.4cm(H)×24.8cm(D)
Weight:	3.2kg

Design & Specifications are subject to change without notice.

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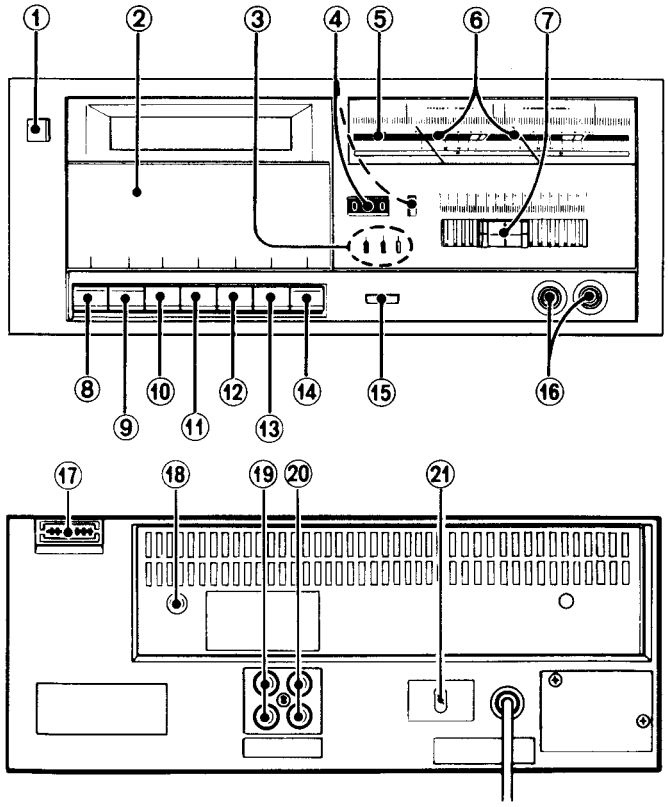
Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

CONTENS

LOCATION OF CONTROLS AND COMPONENTS



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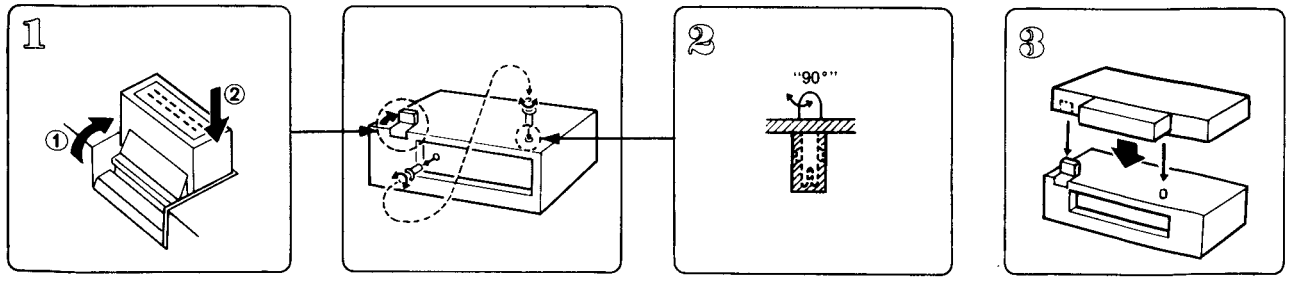
*For Asia, Latin America, Middle East and Africa areas.

FOR CONNECTION WITH THE DIRECT CONNECTOR



Connections should be made in accordance with the connection diagram and the following instructions: When 2 microphones are used in order to record in stereophonic sound, be sure both of them have the same performance and specification standards.

1. For connection with the direct connector:

- Connection can be made without using the stereo pin cords when the unit and TECHNICS' SU-3 Stereo Amplifier and ST-3 FM/AM tuner are stacked up for use.
- Set the direct connector to the erect position, replace the fixing pin at the unit's rear panel on the unit's top and connect the stereo amplifier properly (the fixing pin can be removing by rotating it 90°).

Notes:

- The stereo pin cords must be detached when connection is made using the direct connector.
- Do not shake or twist the components since they will unnecessarily strain the direct connector and fixing pin and may damage them in the process.

2. For connection with the stereo pin cords

- Connection is made with the stereo pin cords when this unit is used in combination with the SU-3 stereo amplifier, ST-3 FM/AM tuner or other components.

Notes:

- Do not set the direct connector to the erect position.
- Secure the fixing pin to the unit's rear panel.

3. Location of this unit and stereo amplifier

If this unit is placed on top or next to the stereo amplifier, a "hum" noise may be heard during tape playback. Refer to the information below in order to avoid this.

- If the stereo amplifier and this unit are placed one above the other, leave as much space as possible between them, and place them where there is the least amount of hum.
- If the stereo amplifier and this unit are placed one beside the other, try reversing their positions, and place them where there is the least amount of hum.

A "click" noise may be heard when the Power Switch is turned on or off. To avoid this, be sure to set the volume control of the amplifier to the minimum position.

DISASSEMBLY INSTRUCTIONS

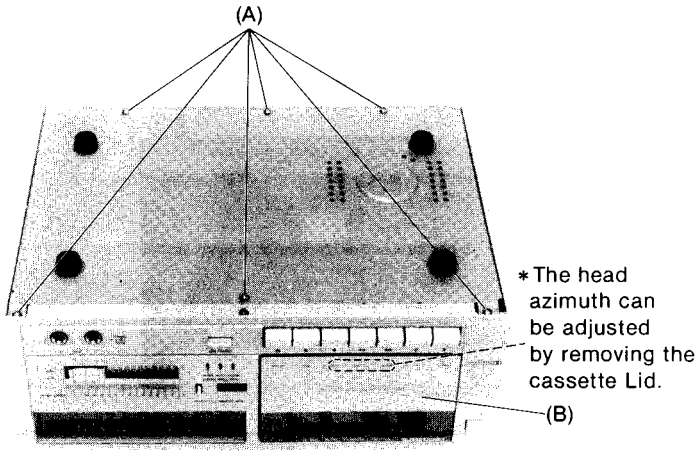


Fig. 1

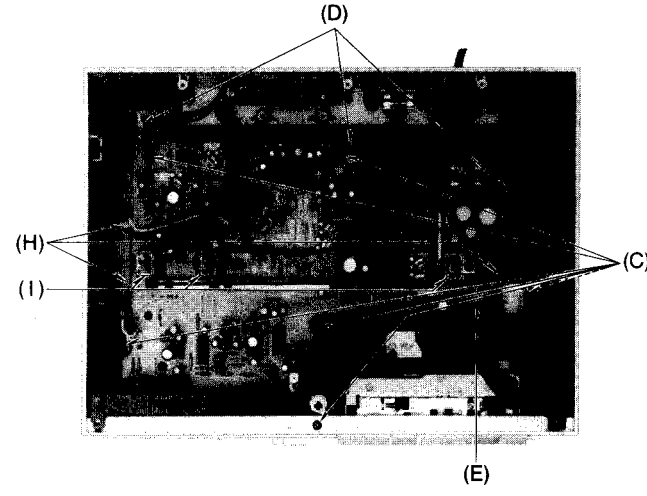


Fig. 2

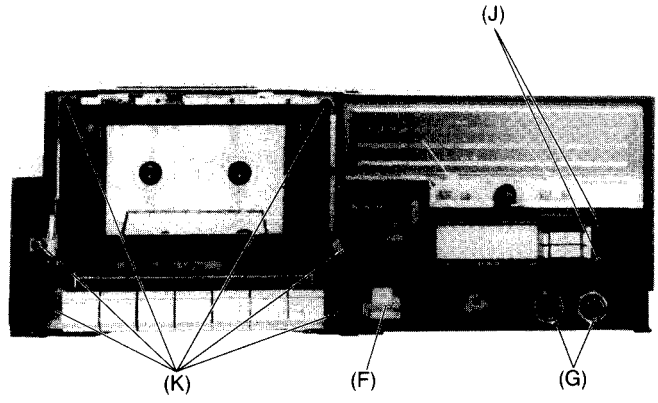


Fig. 3

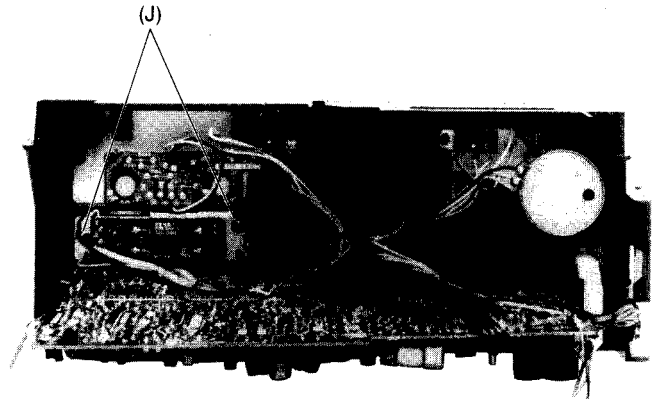


Fig. 4

Ref. No.	Procedure	To remove—.	Remove—.	Shown in fig.—.
1	1	Bottom cover	• 6 screws ..... (A)	1
2	1 → 2	Main circuit board and mechanism unit	• Cassette lid ..... (B) • 6 screws ..... (C) • Cord clamper ..... (D)	1 2 2
3	1 → 2 → 3	Main circuit board	• 1 screw ..... (E) • Dolby NR switch button ..... (F) • 2 nuts ..... (G) • Cord clamper ..... (H) • 3 connectors..... (I)	2 3 3 2 2
4	1 → 2 → 4	Input level control circuit board	• 4 screw ..... (J)	3, 4
5	1 → 2 → 5	Mechanism unit	• 6 screws ..... (K)	3

ASSEMBLY NOTES:

Precautions for mounting the input level control knob assembly

- Move the input level control lever and the input level control knob assembly to the right. Check that they engage each other as shown in fig. 6 and install the slide guide.

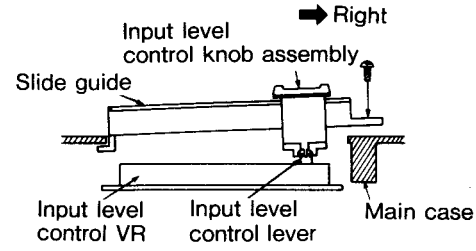
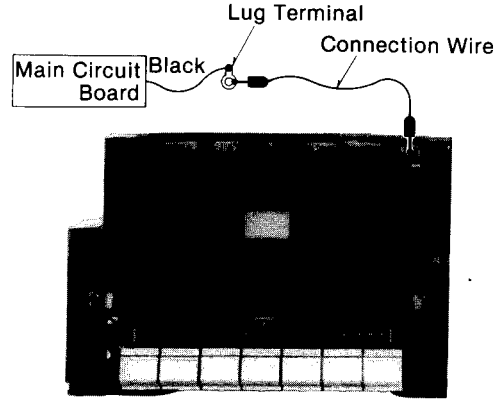


Fig. 6

MECHANISM SECTION

1. For repair, measurement or adjustment with the mechanism removed from the unit be sure to ground the lower base plate of the mechanism.
2. For grounding, connect a extension cord to the mechanism's lower base plate and the lug terminal from amplifier printed circuit board.
3. Without grounding, the amplifier does not operate properly.



MEASUREMENT AND ADJUSTMENT METHODS

NOTE:

Tape speed can be adjusted through the small hole on the backside of main case by the ⊖ screw driver (non metal type) as shown in fig. 1.

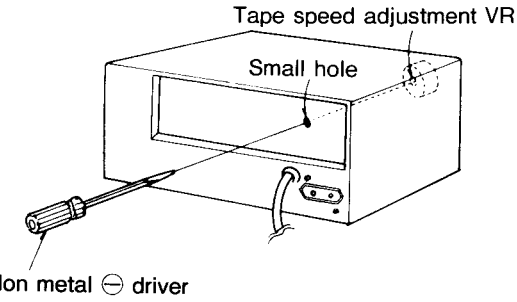


Fig. 1

ADJUSTMENT PARTS LOCATION

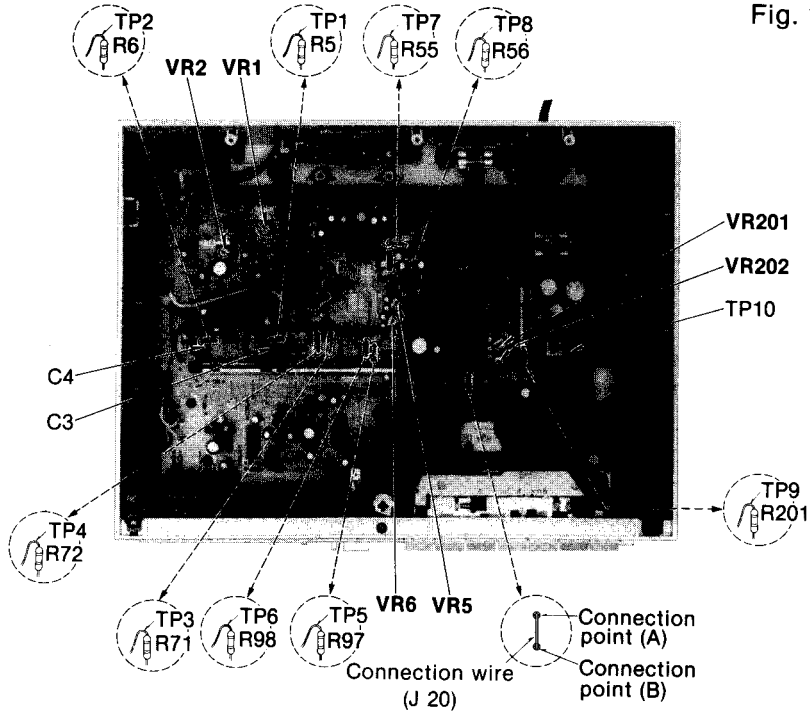


Fig. 2

NOTES: Set switches and controls in the following positions, unless otherwise specified.
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5°C (68±9°F)
- Input level controls: Maximum
- NR switch: OUT

Ⓐ Head position adjustment

Condition:
- Playback and pause mode

(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.)
1. Press the playback button and pause button.
2. Measure the space between the pressure roller and the capstan.

   Standard value: 0.5±0.3mm
3. If the measured value is not within the standard value, untighten screw (A) and slide the head adjusting plate in the direction of arrow (B) for adjustment.

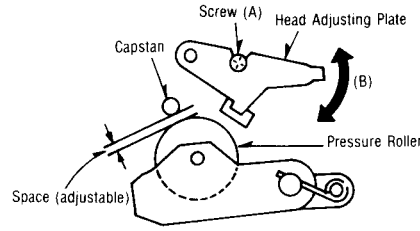


Fig. 3

Ⓑ Head azimuth adjustment

Condition:
- Playback mode
- Normal tape mode

Equipment:
- VTVM
- Oscilloscope
- Test tape (azimuth)...QZZCFM

L-CH/R-CH output balance adjustment

1. Make connections as shown in fig. 4.

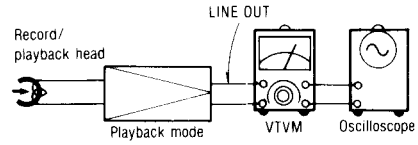


Fig. 4

2. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 5 for maximum output L-CH and R-CH levels. When the output levels of L-CH and R-CH are not at maximum at the same point adjust as follows.
3. Turn screw (B) shown in fig. 5 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate angle B between angles A and C, i.e., point where L-CH and R-CH outputs are balanced. (Refer to figs. 5 and 6.)

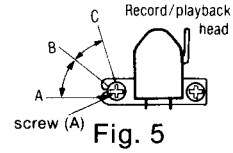


Fig. 5

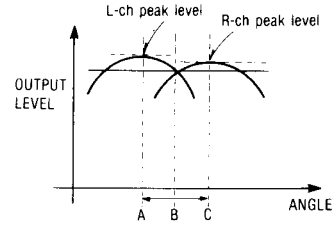


Fig. 6

L-CH/R-CH phase adjustment

4. Make connections as shown in fig. 7.
5. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 5 so that pointers of the two VTVMs swing to maximum and a lissajous waveform as illustrated in fig. 8 is obtained on the oscilloscope.

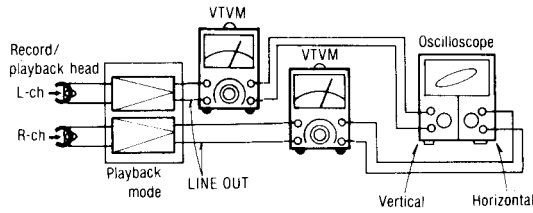


Fig. 7

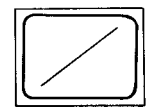


Fig. 8

Ⓒ Tape speed

Condition:
- Playback mode

Equipment:
- Digital frequency counter
- Test tape...QZZCWAT

Tape speed accuracy

1. Test equipment connection is shown in fig. 9.
2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to the digital frequency counter.
3. Measure this frequency.
4. On the basis of 3,000Hz, determine value by following formula:

   Tape speed accuracy $= \frac{f-3{,}000}{3{,}000} \times 100(\%)$ where, f = measured value

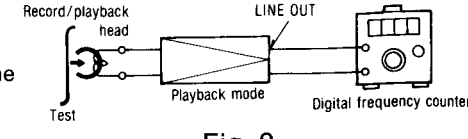


Fig. 9

5. Take measurement at middle section of tape.

Standard value: ±1.5%

6. If measured value is not within the standard value, adjust it by using the tape speed adjustment VR shown in Fig. 1.
Note: Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.

Tape speed fluctuation
Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:

$$\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3{,}000} \times 100(\%) \qquad f_1 = \text{maximum value},\ f_2 = \text{minimum value}$$

Standard value: Less than 1%

Ⓓ Playback frequency response

Condition:
- Playback mode
- Normal tape mode

Equipment:
- VTVM
- Oscilloscope
- Test tape...QZZCFM

1. Test equipment connection is shown in fig. 4.
2. Playback the frequency response portion of test tape (QZZCFM).
3. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz, and compare each output level with the standard frequency 315Hz, at LINE OUT.
4. Make measurements for both channels.
5. Make sure that the measured values are within the range specified in the frequency response chart. (Shown in fig. 10).

Playback frequency response chart

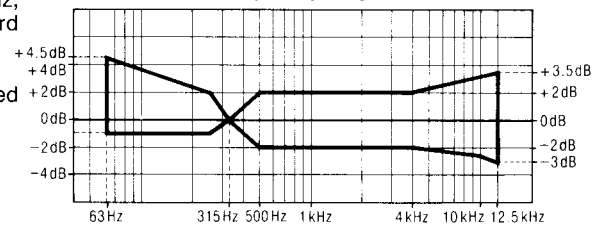


Fig. 10

Ⓔ Playback gain

Condition:
- Playback mode
- Normal tape mode

Equipment:
- VTVM
- Oscilloscope
- Test tape...QZZCFM

1. Test equipment connection is shown in fig. 4.
2. Playback standard recording level portion on test tape (QZZCFM 315Hz) and, using VTVM, measure the output level at test points [TP3 (L-CH), TP4 (R-CH)].
3. Make measurements for both channels.

Standard value: 0.42V [0.4V±2dB: at LINE OUT jack]

Adjustment
1. If the measured value is not within the standard adjust VR1 (L-CH) or VR2 (R-CH) (See fig 2).
2. After adjustment, check "Playback frequency response" again.

Ⓕ Erase current

Condition:
- Record mode
- Metal tape mode

Equipment:
- VTVM
- Oscilloscope

1. Test equipment connection is shown in fig. 11.
2. Place UNIT into metal tape mode.
3. Press the record and pause buttons.
4. Read voltage on VTVM and calculate erase current by following formula:

$$\text{Erase current (A)} = \frac{\text{Voltage across resistor R201}}{1\,(\Omega)}$$

Standard value: 115±15mA (Metal)

5. If the measured value is not within the standard value adjust it by following the adjustment instructions.

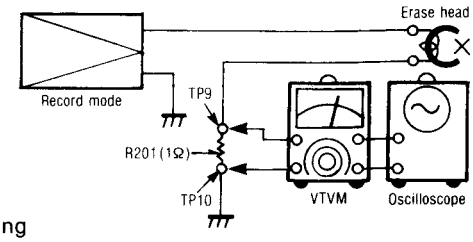


Fig. 11

Adjustment
1. If the erase current is less than 140mA, short the point (A) and (B).
2. If the erase current is more than 170mA, open the points (A) and (B). (Shown in Fig. 2.)

Ⓖ Overall frequency response

Condition:
- Record/playback mode
- Normal tape mode
- CrO_2 tape mode
- Metal tape mode
- Input level controls...MAX

Equipment:
- VTVM
- ATT
- AF oscillator
- Oscilloscope
- Resistor (600Ω)
- Test tape (reference blank tape)
  ...QZZCRA for Normal
  ...QZZCRX for CrO_2
  ...QZZCRZ for Metal

Note:
Before measuring and adjusting, the overall frequency response make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).

(Recording equalizer is fixed)
1. Make connections as shown in fig. 13.
2. Place UNIT into normal tape mode and insert the normal reference blank test tape (QZZCRA).
3. Supply a 1kHz signal from the AF oscillator through ATT to LINE IN.
4. Adjust ATT so that input level is −20dB below standard recording level (standard recording level = 0 VU).
5. Adjust the AF oscillator frequency to 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz and 12kHz signals, and record these signals on the test tape.
6. Playback the signals recorded in step 6, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 12).
   (If the curve is within the charted specifications, proceed to steps 7, 8 and 9.)
   If the curve is not within the charted specifications, adjust as follows;

Overall frequency response chart (Normal)

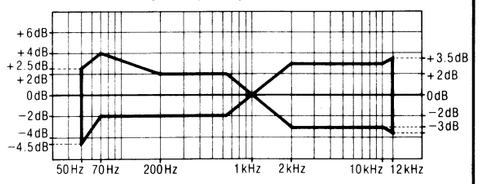


Fig. 12

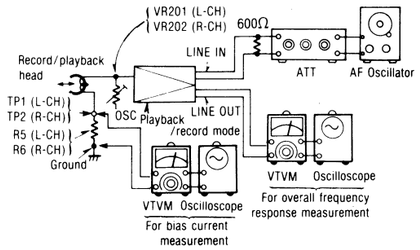


Fig. 13

Adjustment (A):
When the curve exceeds the overall specified frequency response chart (fig. 12) as shown in fig. 14.
1) Increase bias current by turning VR201 (L-CH) and VR202 (R-CH).
   (See fig. 2 on page 4.)
2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 12.)
3) If the curve still exceeds the specifications (fig. 12), increase bias current further and repeat steps 5 and 6.

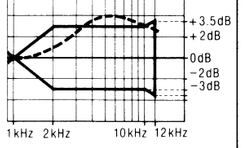


Fig. 14

Adjustment (B):
When the curve falls below the overall specified frequency response chart (fig. 12) as shown in fig. 15.
1) Reduce bias current by turning VR201 (L-CH) and VR202 (R-CH).
2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 12.)
3) If the curve still falls below the charted specifications (fig. 12), reduce bias current further and repeat steps 5 and 6.

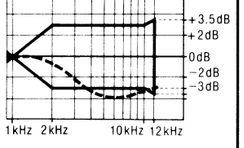


Fig. 15

7. Place UNIT into CrO_2 tape mode.
8. Change test tape to CrO_2 reference blank test tape (QZZCRX), and record 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz, 12kHz and 14kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart or CrO_2 tapes (fig. 16).
9. Place UNIT into metal tape mode and change test tape to metal reference blank test tape (QZZCRZ), and record 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz, 12kHz and 14kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 16).
10. Confirm that bias currents are approximately as follows when the UNIT is set at different tape mode.
    - Read voltage on VTVM between ground and test point (TP1 for L-CH, TP2 for R-CH) and calculate bias current by following formula:

$$\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10\ (\Omega)}$$

Standard value:
around 380μA (Normal position)
around 480μA (CrO_2 position)
around 780μA (Metal position)

Overall frequency response chart (CrO_2, Metal)

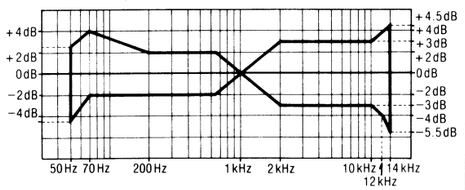


Fig. 16

Ⓗ Overall gain

Condition:
- Record/playback mode
- Normal tape mode
- Input level controls...MAX
- Standard input level;
  MIC .....−72±3.5dB
  LINE IN .....−24±3.5dB

Equipment:
- VTVM
- ATT
- AF oscillator
- Oscilloscope
- Resistor (600Ω)
- Test tape (reference blank tape)
  ...QZZCRA for Normal

1. Test equipment connection is shown in fig. 17.
2. Insert the normal reference blank tape (QZZCRA).
3. Place UNIT into record mode.
4. Supply a 1kHz signal through ATT (−24dB) from AF oscillator, to LINE IN.
5. Adjust ATT until monitor level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
6. Playback recorded tape, and make sure that the output level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
7. If measured value is not 0.42V, adjust it by using VR5 (L-CH) or VR6 (R-CH).
8. Repeat from step (2).

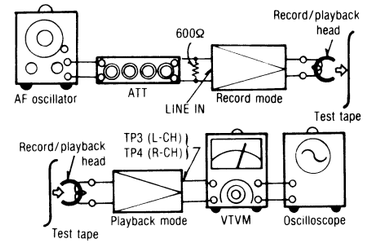


Fig. 17

Ⓘ Level meter

Condition:
- Record mode
- Input level controls...MAX

Equipment:
- VTVM
- ATT
- AF oscillator
- Oscilloscope
- Resistor (600Ω)

1. Test equipment connection is shown in fig. 18.
2. Supply a 1kHz signal through ATT (−24dB) to the LINE IN then place the UNIT into the record mode.
3. Adjust the ATT so that the output level at test points [TP5 (L-CH), TP6 (R-CH)] becomes 0.42V (The input level at this condition is called the standard input level).
4. At this time, confirm that the level meter indication is within a range of −1dB to +1dB (shown in fig. 19) (Confirm this for both L and R channels.)

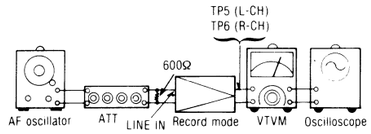


Fig. 18

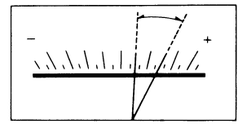


Fig. 19

Ⓙ Dolby NR circuit

Condition:
- Record mode
- Input level controls...MAX

Equipment:
- VTVM
- ATT
- AF oscillator
- Oscilloscope
- Resistor (600Ω)

1. Test equipment connection is shown in fig. 20.
2. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply a 5kHz signal to LINE IN to obtain −34.5dB at TP5 (L-CH), TP6 (R-CH).
3. Confirm that the values at test points TP5, TP6 with Dolby NR switch in the IN position are 8 (±2.5)dB greater than the values at the OUT position of the Dolby NR switch.

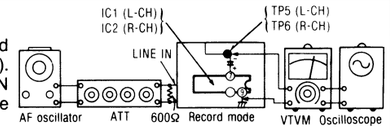
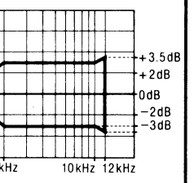
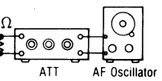


Fig. 20

ape
nce blank tape)
ZZCRA for Normal
ZZCRX for CrO_2
ZZCRZ for Metal

chart (Normal)





For overall frequency
esponse measurement

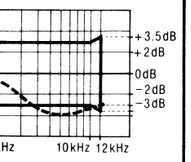
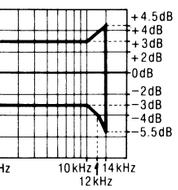


Fig. 15

arted specifications
r and repeat steps

hart (CrO_2, Metal)



Overall gain

Condition:
- Record/playback mode
- Normal tape mode
- Input level controls...MAX
- Standard input level;
  MIC .....−72±3.5dB
  LINE IN .....−24±3.5dB

Equipment:
- VTVM • AF oscillator
- ATT • Oscilloscope
- Resistor (600Ω)
- Test tape (reference blank tape) ...QZZCRA for Normal

1. Test equipment connection is shown in fig. 17.
2. Insert the normal reference blank tape (QZZCRA).
3. Place UNIT into record mode.
4. Supply a 1kHz signal through ATT (−24dB) from AF oscillator, to LINE IN.
5. Adjust ATT until monitor level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
6. Playback recorded tape, and make sure that the output level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
7. If measured value is not 0.42V, adjust it by using VR5 (L-CH) or VR6 (R-CH).
8. Repeat from step (2).

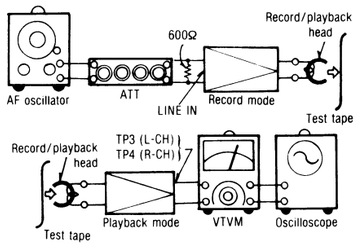


Fig. 17

Level meter

Condition:
- Record mode
- Input level controls...MAX

Equipment:
- VTVM • AF oscillator
- ATT • Oscilloscope
- Resistor (600Ω)

1. Test equipment connection is shown in fig. 18.
2. Supply a 1kHz signal through ATT (−24dB) to the LINE IN then place the UNIT into the record mode.
3. Adjust the ATT so that the output level at test points [TP5 (L-CH), TP6 (R-CH)] becomes 0.42V (The input level at this condition is called the standard input level).
4. At this time, confirm that the level meter indication is within a range of −1dB to +1dB (shown in fig. 19) (Confirm this for both L and R channels.)

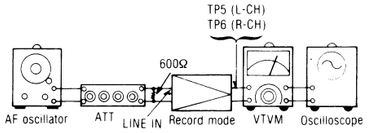


Fig. 18

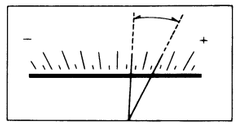


Fig. 19

Dolby NR circuit

Condition:
- Record mode
- Input level controls...MAX

Equipment:
- VTVM • AF oscillator
- ATT • Oscilloscope
- Resistor (600Ω)

1. Test equipment connection is shown in fig. 20.
2. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply a 5kHz signal to LINE IN to obtain −34.5dB at TP5 (L-CH), TP6 (R-CH).
3. Confirm that the values at test points TP5, TP6 with Dolby NR switch in the IN position are 8 (±2.5)dB greater than the values at the OUT position of the Dolby NR switch.

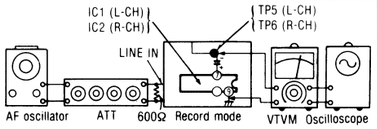
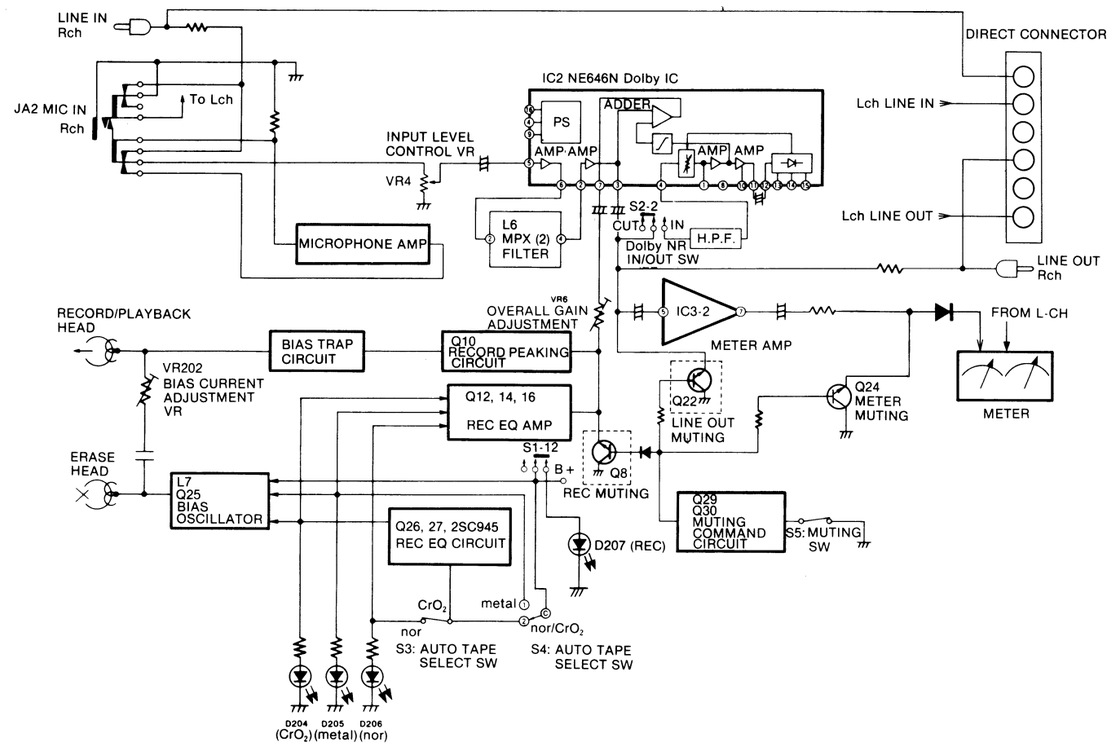


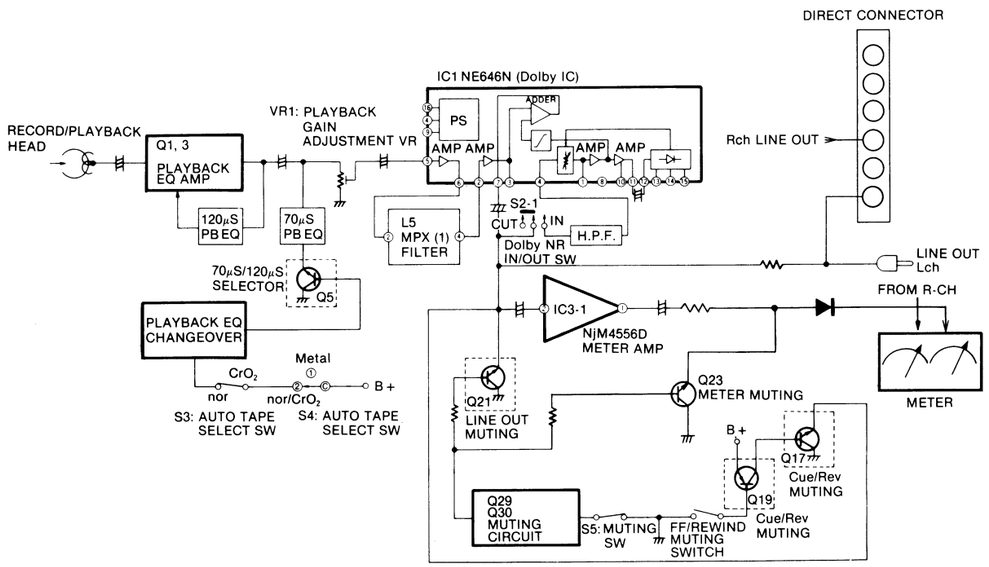
Fig. 20

BLOCK DIAGRAM

■ RECORD SYSTEM (R-CH ONLY)



■ PLAYBACK SYSTEM (L-CH ONLY)



RS-3

SCHEMATIC DIAGRAM

I MAIN CIRCUIT SECTION

D1, 2 [RD6R8EB2] | Q1, 2 2SC1844(E,F) [2SC1844E] | Q3, 4 2SC945(-K,-P) [2SC945-Q] | Q5~8 2SC945(-P,-Q) [2SC945-Q] | IC1,2 NE646N | Q9, 10 2SC945-P [2SC945-Q] | Q11–18 2SC945(-P,-Q) [2SC945-Q] | Q19 2SA1115(E,F) [2SA1115] | Q21, 22 [2SD471] | Q23, 24 2SC945(-P,-Q) [2SC945-Q] | D301–304 [OA90A] | D207 [TLR205]

IC3 NJM4556D

MIC
J1 (L-CH)
J2 (R-CH)
RECORD/PLAYBACK HEAD
Lch
Rch
(QWY4122Z)
ERASE HEAD
(QWY2138Z)

D: (1W)
N: (1/2W)

D: 33 N: 47
D: 68 N: 56

Connection Point (A)
Connection Point (B)

	B	C	E
Nor	0V (0.41V)	0V (4.9V)	0V (0.18V)
CrO_2	0V (0.35V)	0V (7.2V)	0V (0.26V)
Met	0V (0.14V)	0V (3.0V)	0V (0.5V)

	B	C	E
Nor	0V	19.0V	0.1V
CrO_2	18.8V	19.0V	18.1V
Met	0V	0V	0.2V

	B	C	E
Nor	0.74V	0V	0V
CrO_2	0V	18.8V	0V
Met	0V	0V	0V

Q25 [2SD471]

D201 1SR35200FV

D202 1S2473T77 [MA161]

D204 [TLG205]

D205 [TLY205]

D206 [TLR205]

Q26–29 2SC945(-P,-Q) [2SC945-Q]

D211 1S2473FV [MA161]

D208–210 1S2473T77 [MA161]

Q30 2SA1115(E,F) [2SA1115]

Q31 2SD794(P,Q) [2SD794]

D213–216 1SR35200LF [SM112]

MOTR Ass'y (QXU 0170)

D: (1W)
N: (1/2W)

II LEVEL METER SECTION

METER LAMP

III JACK BOARD SECTION

LINE OUT
LINE IN
JACK

IV DIRECT CONNECTOR SECTION

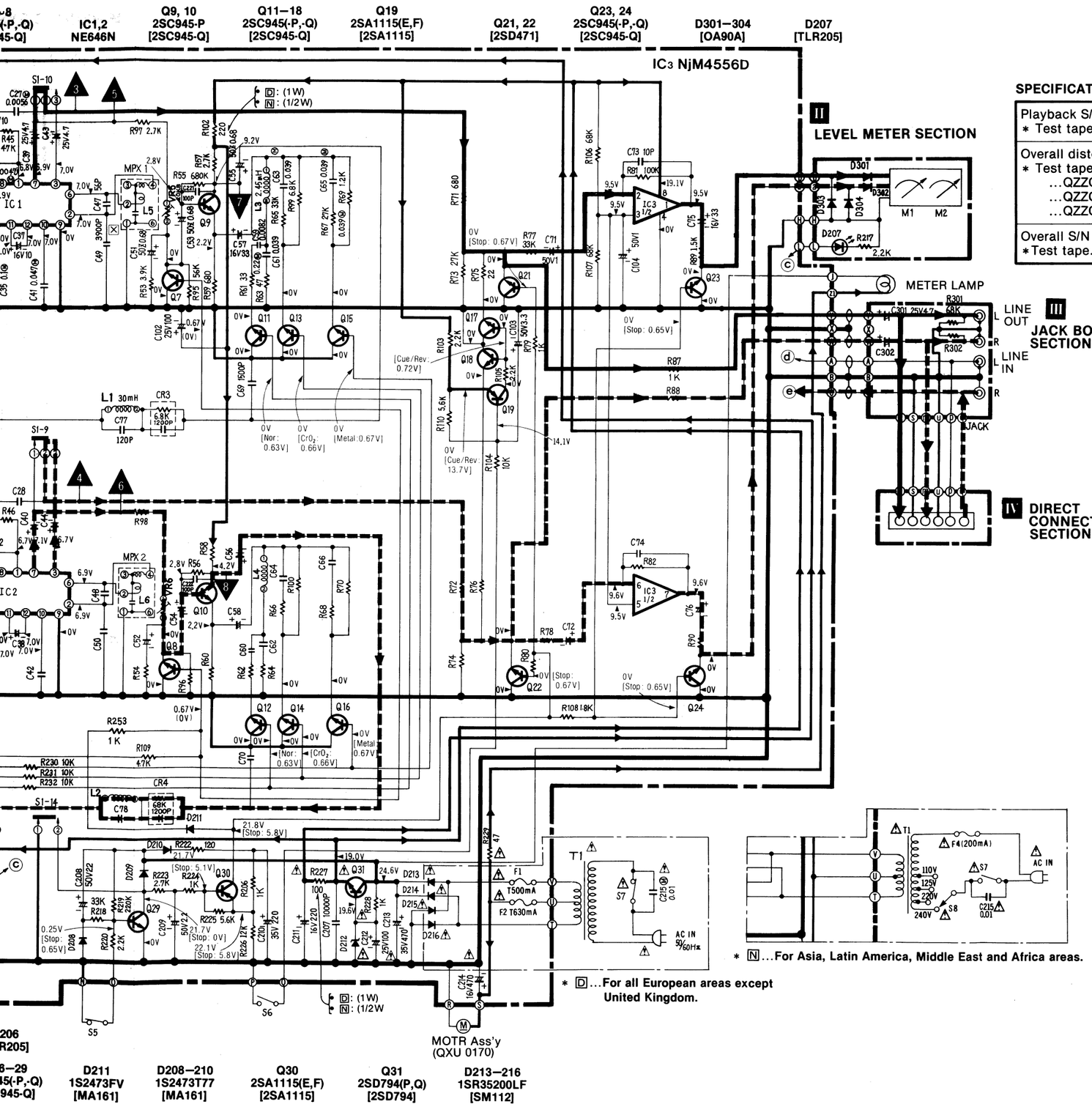
SPECIFICATIONS

Playback S/N ratio * Test tape...QZZCR
Overall distortion * Test tape ...QZZCRA for N ...QZZCRX for C ...QZZCRZ for M
Overall S/N ratio *Test tape...QZZCR

T1
F4(200mA)
110V
125V
220V
240V
S7
S8
AC IN
F1 T500mA
F2 T630mA
AC IN 50/60Hz

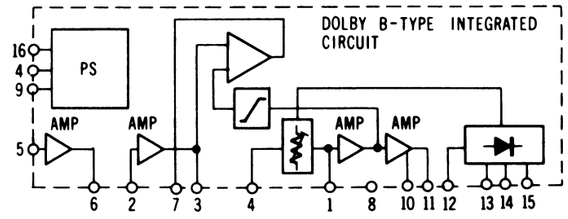
* N ...For Asia, Latin America, Middle East and Africa areas.

* D ...For all European areas except United Kingdom.

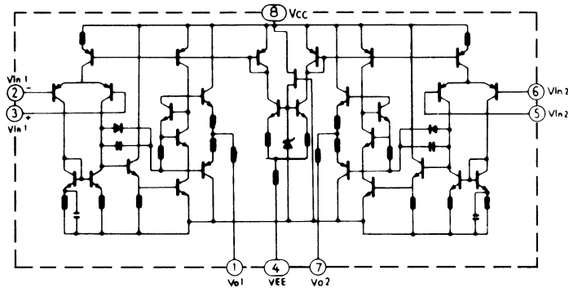


EQUIVALENT CIRCUIT

IC1, 2 NE646N



IC3 NjM4556D



SPECIFICATIONS * Input level controls...MAX

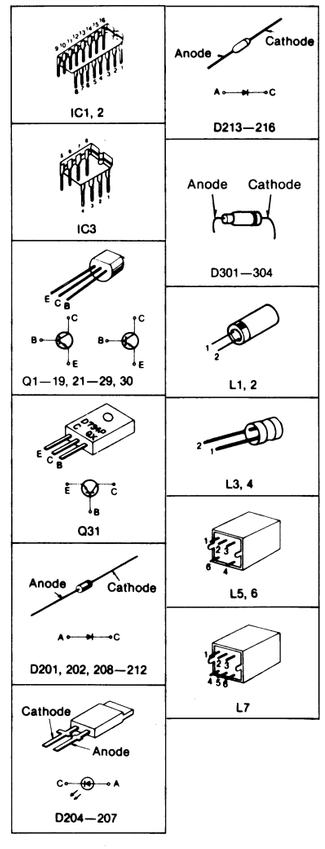
Playback S/N ratio * Test tape...QZZCFM	More than 45dB (without NAB filter)
Overall distortion * Test tape ...QZZCRA for Normal ...QZZCRX for CrO_2 ...QZZCRZ for Metal	Less than 3% (Normal) Less than 3.5% (CrO_2, Metal)
Overall S/N ratio *Test tape...QZZCRA	More than 45dB (without NAB filter)

NOTES:

- S1-1—S1-14.....Record/Playback select switch (shown in playback position).
- S2-1—S2-2 .....Dolby NR IN/OUT select switch (shown in out position).
- S3.....Auto tape select switch (shown in Normal position).
- S4.....Auto tape select switch.
  (1...Metal position, 2...Normal position, CrO_2 position)
- S5.....Muting switch.
- S6.....FF/Rewind muting switch.
- S7.....Power ON/OFF switch.
- S8.....AC power voltage select switch.
  * For Asia, Latin America, Middle East and Africa areas.
- VR1, 2 .....Playback gain adjustment VR.
- VR3, 4 .....Input level controls.
- VR5, 6 .....Overall gain adjustment VR.
- VR201, 202 .....Bias current adjustment VR.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  1K = 1,000Ω, M = 1,000KΩ.
- Capacity are micro farads (μF) unless specified otherwise.
  P = Pico-farads.
- The mark (▼) shows test point. e.g. ▽ = Test point 1.
- (➡) this arrow indicates the flow of the playback signal.
- (➡) this arrow indicates the flow of the recording signal.
- All voltage values shown in circuitry are under no signla condition.
  Unless otherwise specified, voltage measurement conditions are the tape travel is at PLAY, tape mode at NORMAL, and Dolby NR switch at OFF.
  Nor .....Voltage at normal tape mode
  CrO_2 .....Voltage at CrO_2 tape mode
  Met .....Voltage at Metal tape mode
  Cue/Rev .....Voltage at cue/Review mode
  Stop .....Voltage at stop mode
  For measurent, use VTVM.
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components, use only manufacturer's specified parts.
- Described in the schematic diagram are two types of number; the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.
  e.g. Q1
  {2SC1327(S,T)——Production parts number
  {[2SC1328]——Supply parts number
  D208
  {1S2473T77——Production parts number
  {[MA161]——Supply parts number
- **The supply parts number is described alone in the replacement parts list.**
- D .....For all European areas except United Kingdom.
- N .....For Asia, Latin America, Middle East and Africa areas.

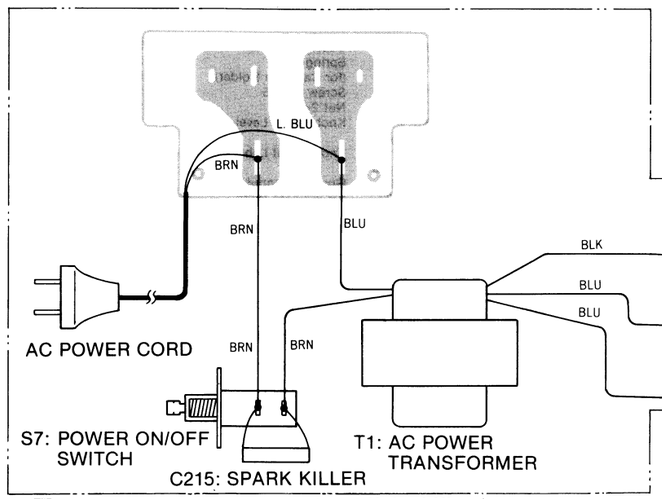
- **This schematic diagram may be modified at any time with the development of new technology.**

TERMINATIONS

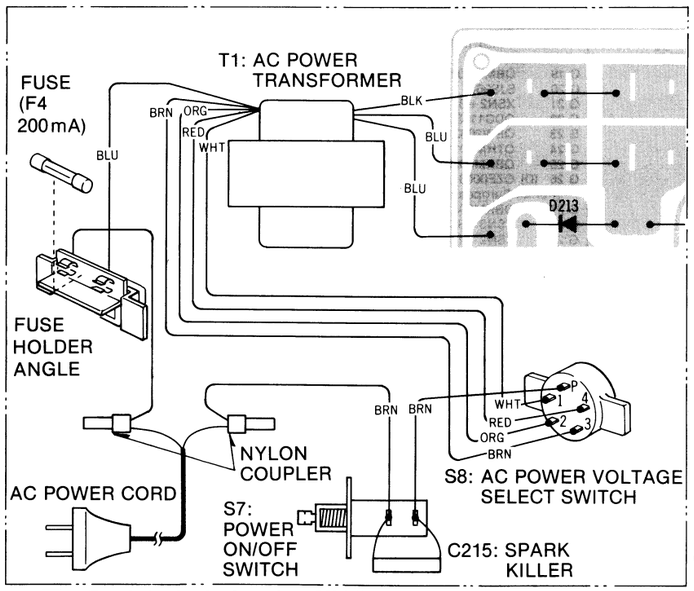


CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

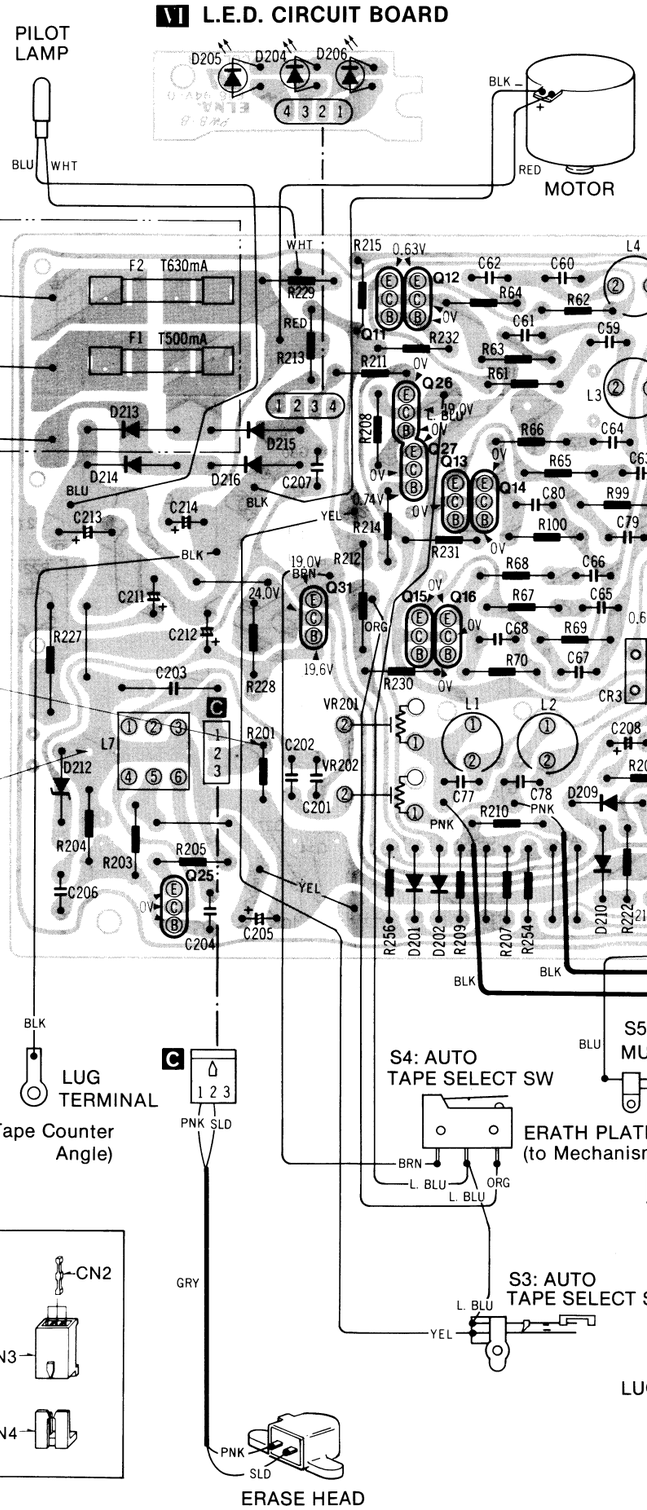
VI L.E.D. CIRCUIT BOARD



* D ...For all European areas extcept United Kingdom.



* N ...For Asia, Latin America, Middle East and Africa areas.

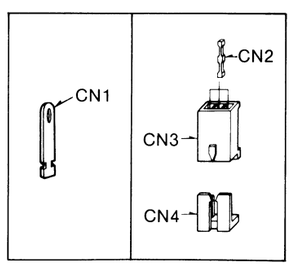


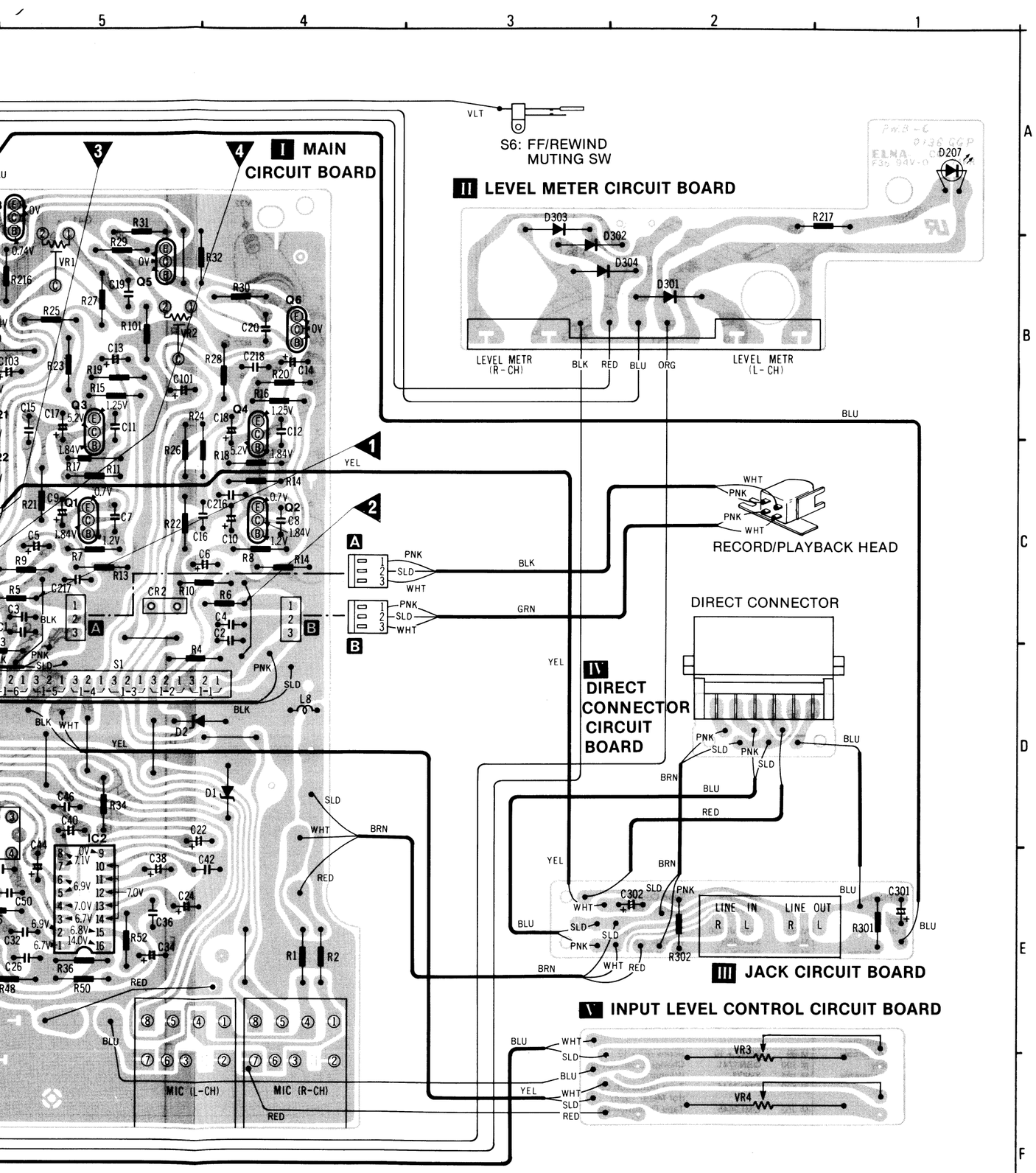
NOTES:

- The circuit shown in [redacted] on the conductor indicates printed circuit on the back side of the printed circuit board.
- All voltage values shown in circuitry are no signal condition and playback mode.
  For measurent, use VTVM.
- The supply parts number is described alone in the replacement parts list.
- **This circuit board diagram may be modified at any time with the development of new technology.**

NOTES:

BLK .....Black
BLU .....Blue
BRN.....Brown
GRY.....Gray
GRN .....Green
L. BLU ....Light Blue
NIL.....No Color Mark
ORG .....Orange
PNK.....Pink
RED.....Red
SLD .....Shield Wire
VLT.....Violet
WHT.....White
YEL.....Yellow





ELECTRICAL PARTS LIST

NOTES: RESISTORS
ERD.....Carbon
ERG .....Metal-oxide
ERS.....Metal-oxide
ERO .....Metal-film
ERX.....Metal-film
ERQ .....Fuse type metallic
ERC.....Solid
ERF.....Cement

CAPACITORS
ECBA .....Ceramic
ECG□.....Ceramic
ECK□.....Ceramic
ECC□.....Ceramic
ECF□.....Ceramic
ECQM.....Polyester film
ECQE .....Polyester film
ECQF .....Polypropylene
ECE□.....Electrolytic
ECE□N ...Non polar electrolytic
ECQS .....Polystyrene
ECS□.....Tantalum
QCS .....Tantalum

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.
RESISTORS	
R 1, 2	ERD25TJ273
R 3, 4	ERD25FJ103
R 5, 6	ERD25FJ100
R 7, 8	ERD25FJ181
R 9, 10	ERD25FJ560
R 11, 12	ERD25TJ104
R 13, 14	ERD25FJ682
R 15, 16	ERD25TJ104
R 17, 18	ERD25FJ472
R 19, 20	ERD25FJ821
R 21, 22	ERD25TJ124
R 23, 24	ERD25FJ472
R 25, 26	ERD25TJ393
R 27, 28	ERD25FJ472
R 29, 30	ERD25FJ562
R 31, 32	ERD25TJ104
R 33, 34, 35, 36	ERD25FJ102
R 37, 38	ERD25TJ105
R 39, 40	ERD25FJ332
R 41, 42	ERD25TJ474
R 43, 44	ERD25FJ181
R 45, 46	ERD25TJ473
R 47, 48	ERD25FJ102
R 49, 50	ERD25TJ184
R 51, 52	ERD25TJ274
R 53, 54	ERD25FJ392
R 55, 56	ERD25TJ684
R 57, 58	ERD25FJ272
R 59, 60	ERD25FJ681
R 61, 62	ERD25FJ330
R 63 , 64	ERD25FJ470
R 65, 66	ERD25FJ332
R 67, 68	ERD25FJ272
R 69, 70	ERD25FJ122
R 71, 72	ERD25FJ681
R 73, 74	ERD25TJ273
R 75, 76	ERD25FJ220
R 77, 78	ERD25TJ333
R 79, 80	ERD25FJ102
R 81, 82	ERD25TJ104
R 87, 88	ERD25FJ102
R 89, 90	ERD25FJ152
R 95, 96	ERD25TJ563
R 97, 98	ERD25FJ272
R 99, 100	ERD25FJ682
R 101	ERD25FJ561
R 102 [D]	ERG1ANJ221
[For all European areas except United Kingdom] [N]	ERD25FJ221
[For Asia, Latin Aamerica, Middle East and Africa areas]	
R 103	ERD25FJ222
R 104	ERD25FJ103
R 105	ERD25FJ222
R 106, 107	ERD25TJ683
R 108	ERD25FJ182
R 109	ERD25FJ472
R 110	ERD25FJ562
R 201	ERD25FJ1R0
R 203, 204	ERD25FJ562
R 205	ERD25FJ100
R 206	ERD25FJ102
R 207	ERD25FJ220
R 208	ERD25FJ182
R 209	ERD25FJ471
R 210	ERD25FJ391
R 211	ERD25FJ122
R 212	ERD50FJ102
R 213	ERD25FJ222
R 214, 215	ERD25FJ103
R 216	ERD25FJ682
R 217	ERD25FJ222
R 218	ERD25TJ333
R 219	ERD25TJ224
R 220	ERD25FJ222
R 222 [D]	ERD2FCG121
[For all European areas except United Kingdom] [N]	ERD25FJ121
[For Asia, Latin Aamerica, Middle East and Africa areas]	
R 223	ERD25FJ272
R 224	ERD25FJ102
R 225	ERD25FJ562
R 226	ERD25TJ123
R 227 [D]⚠	ERG1ANJ101
[For all European areas except United Kingdom] [N]	ERD50FJ101
[For Asia, Latin Aamerica, Middle East and Africa areas]	
R 228 ⚠	ERD25FJ102
R 229 ⚠	ERD25FJ470
R 230, 231, 232	ERD25FJ103
R 253	ERD25FJ102
R 254 [D]	ERD2FCG680
[For all European areas except United Kingdom] [N]	ERD25FJ560
[For Asia, Latin Aamerica, Middle East and Africa areas]	
R 255	ERG1ANJ471
R 256 [D]	ERD25FJ330
[For all European areas except United Kingdom] [N]	ERD25FJ470
[For Asia, Latin Aamerica, Middle East and Africa areas]	
R 301, 302	ERD25TJ683

VARIABLE RESISTORS

VR 1, 2	EVNM4AA00B24
VR 3, 4	QVAD1AU10A24
VR 5, 6	EVNM4AA00B24
VR 201, 202	EVNM4AA00B15

CAPACITORS

C 1, 2	ECKD1H471KB
C 5, 6	ECEA16M10R
C 7, 8	ECKD1H102KB
C 9, 10	ECEA1CS330
C 11, 12	ECCD1H470J
C 13, 14	ECEA1CS330
C 15, 16	ECQV05273JZ
C 17, 18	ECEA1HS100
C 19, 20	ECQM1H123JZ
C 21, 22	ECEA50MR33R
C 23, 24	ECEA1AS221
C 25, 26	ECQV05273JZ
C 27, 28	ECQM1H562JZ
C 29, 30	ECEA1HS100
C 31, 32	ECQM1H472JZ
C 33, 34	ECEA50ZR33
C 35, 36	ECQV05104JZ
C 37, 38	ECEA1HS100
C 39, 40	ECEA25Z4R7
C 41, 42	ECQM1H473JZ
C 43, 44	ECEA25Z4R7
C 47, 48	ECCD1H560J
C 49, 50	ECQP1392JZ
C 51, 52, 53	ECEA50ZR68
C 54	ECEA50ZR68
C 55	ECEA50ZR68
C 56	ECEA50ZR68
C 57, 58	ECEA1CS330
C 59, 60	ECQM1H822JZ
C 61, 62, 63, 64, 65, 66	ECQM1H393JZ
C 69, 70	ECKD1H152KB
C 71, 72	ECEA50Z1
C 73, 74	ECCD1H100J
C 75, 76	ECEA1CS330
C 77, 78	ECCD1H121K
C 101	ECEA1CS221
C 102	ECEA1ES101
C 103	ECEA50Z3R3
C 104	ECEA50Z1
C 201, 202	ECKD1H181KB
C 203	ECQF6332KZ
C 204	ECQM1H153JZ
C 205	ECEA1ES101
C 206	ECQM1H822JZ
C 207	ECKD1H103KB
C 208	ECEA1JS220
C 209	ECEA50Z2R2
C 210	ECEA1VS221
C 211 ⚠	ECEA1CS221
C 212 ⚠	ECEA1ES101
C 213 ⚠	ECEA1VSS471
C 214 ⚠	ECEA1CS471
C 215 ⚠	ECQU2A103MF
C 216, 217, 218	ECCD1H560J
C 221, 222	ECCD1H101K
C 301, 302	ECEA25Z4R7

COMBINATION PARTS

CR 1, 2	EXRP102K472W
CR 3, 4	EXRP122K682W

TRANSISTORS

Q 1, 2	2SC1844E
Q 3, 4, 5 , 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	2SC945-Q
Q 19	2SA1115
Q 21, 22	2SD471
Q 23, 24	2SC945-Q
Q 25	2SD471
Q 26, 27, 28, 29	2SC945-Q
Q 30	2SA1115
Q 31	2SD794

DIODES & RECTIFIERS

D 1, 2	RD6R8EB2
D 201	SM112
D 202	MA161
D 204	TLG205
D 205	TLY205
D 206, 207	TLR205
D 208, 209, 210, 211 ⚠	MA161
D 212 ⚠	RD20EB3
D 213, 214, 215, 216 ⚠	SM112
D 301, 302, 303, 304	OA90M

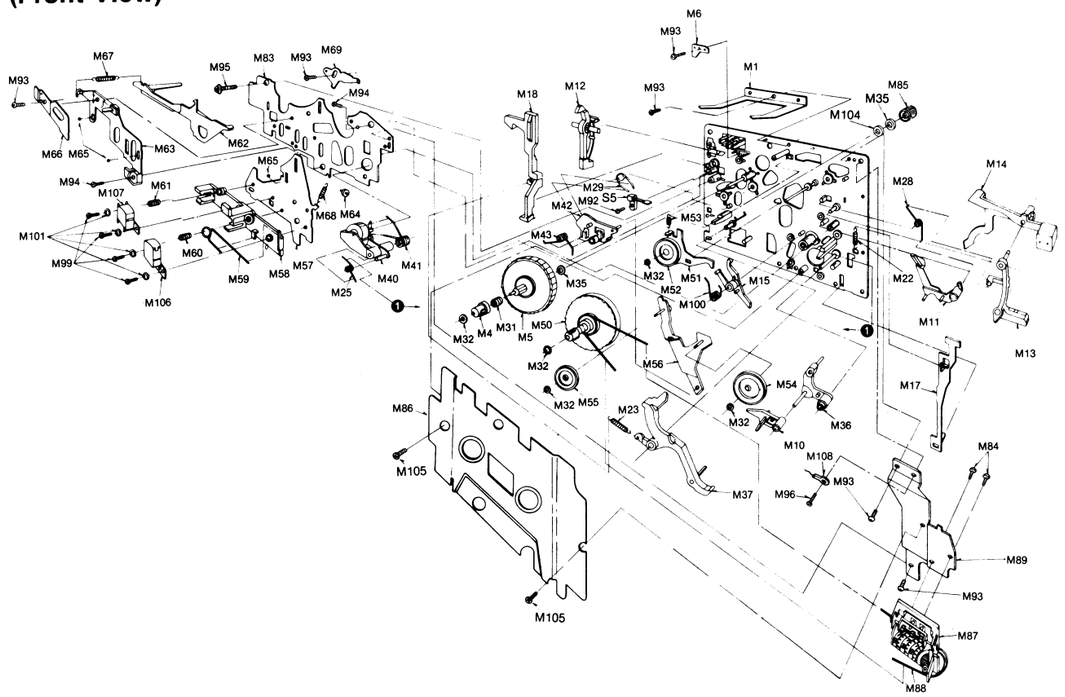
INTEGRATED CIRCUITS

IC 1, 2	NE646N
IC 3	AN6552

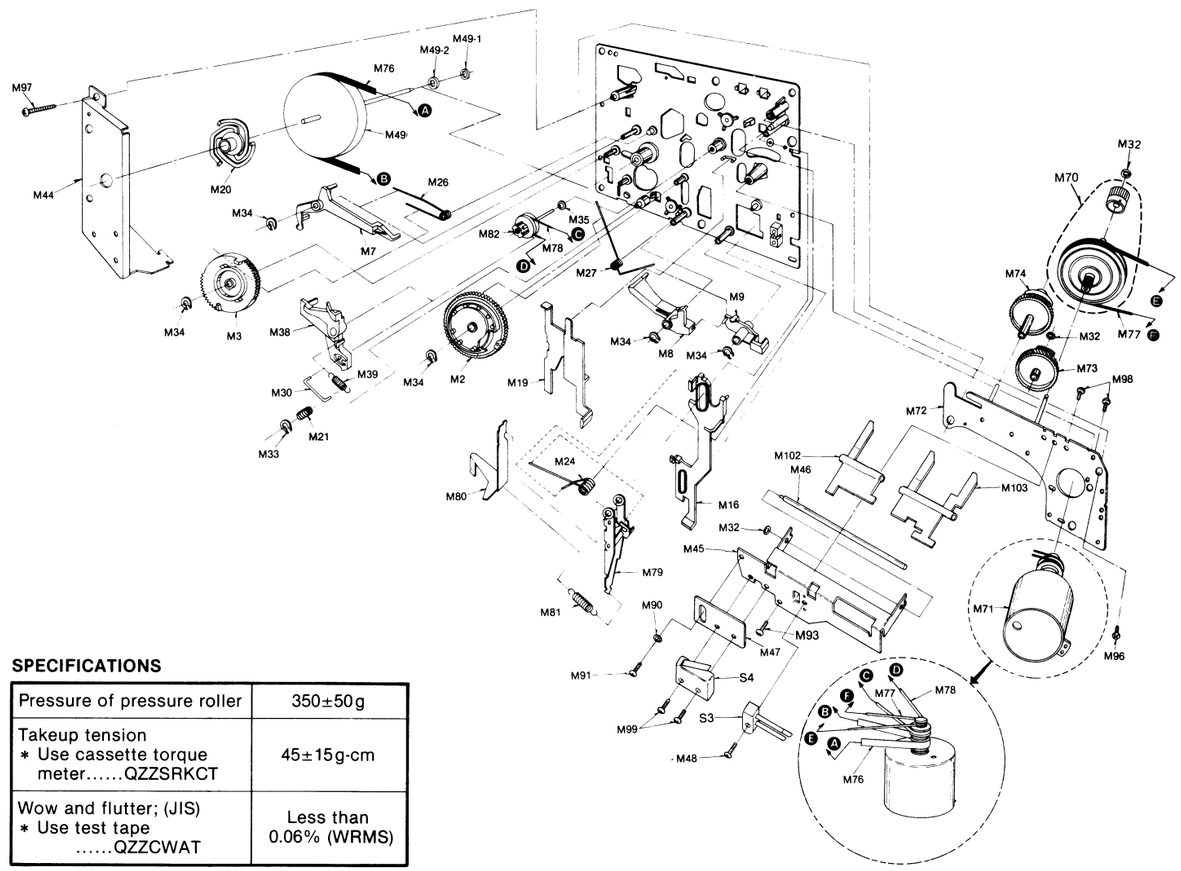
Ref. No.	Part No.	Part Name & Description
COILS		
L 1, 2	QLQX0343KWA	Coil (Bias Trap)
L 3, 4	QLQX2421Y	Peaking Coil
L 5, 6	SLM1Z19	Coil (Multiplex)
L 7	QLB0198	Coil (Bias Oscillation)
TRANSFORMERS		
T 1 [D] ⚠	QLPD72EKE	AC Power Transformer
[For all European areas except United Kingdom] [N] ⚠	QLPN75EKE	AC Power Transformer
[For Asia, Latin Aamerica, Middle East and Africa areas]		
FUSES		
F 1 [D] ⚠	XBAQ0003	Fuse (T 500mA)
[For all European areas except United Kingdom]		
F 2 [D] ⚠	XBAQ0008	Fuse (T 630mA)
[For all European areas except United Kingdom]		
F 4 [N] ⚠	XBA2E02NM5U	Fuse (200mA)
[For Asia, Latin Aamerica, Middle East and Africa areas]		
SWITCHES		
S 1	QSSE203	Switch (Record/Playback Selector)
S 2	QSW2232	Switch (Dolby IN/OUT)
S 3	QSB0253	Switch (Auto Tape Selector)
S 4	AH32229	Micro Switch (Auto Tape Selector)
S 5	QSB0251	Switch (REC-MUTE ON/OFF)
S 6	QSB0251	Switch (for Forward/Rewind Muting)
S 7 ⚠	QSW1117AS	Switch (Power ON/OFF)
S 8 [N] ⚠	QSR1407H	Rotary Switch (AC Power Voltage Selector)
[For Asia, Latin Aamerica, Middle East and Africa areas]		
JACKS		
J 1, 2	QJA0253	Jack (Microphone)
J 3, 4, 5, 6	SJF3053	Jack Board (LINE IN/OUT)
CONNECTORS		
CN 1	QJT0053	Check Pin
CN 2	QJT1054	Contact
CN 3	QJS1921TN	Socket (3Pin)
CN 4	QJP1921TN	Post (3Pin)

MECHANICAL PARTS LOCATION

(Front View)



(Rear View)



When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

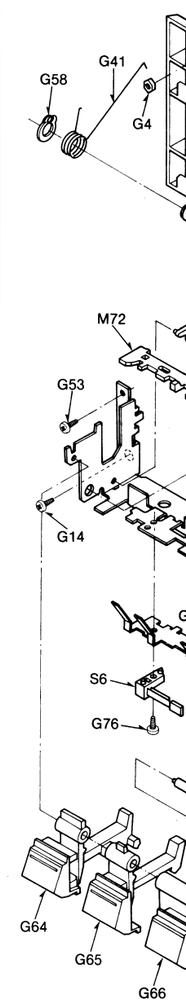
SPECIFICATIONS

Pressure of pressure roller	350±50g
Takeup tension * Use cassette torque meter.....QZZSRKCT	45±15g-cm
Wow and flutter; (JIS) * Use test tape .....QZZCWAT	Less than 0.06% (WRMS)

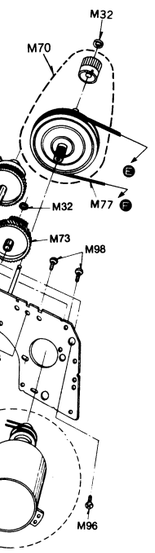
REPLACEMENT PARTS LIST

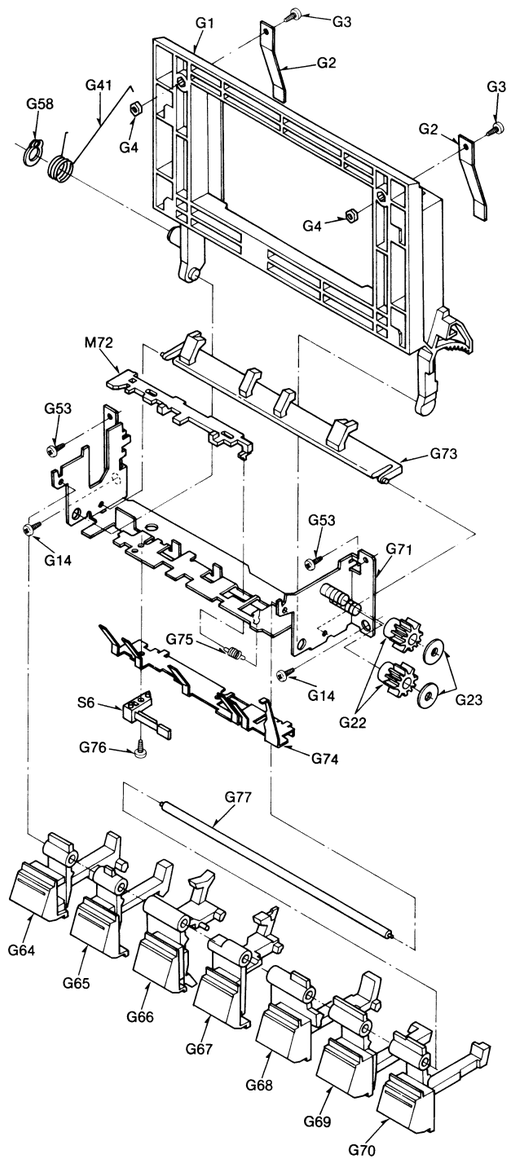
Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
M 1	QBP1874	Cassette Pressure Spring
M 2	QDG1201	Main Gear
M 3	QDG1202	Sub Gear
M 4	QMB1336	Supply Reel Table Hub
M 5	QDR1139	Supply Reel Table
M 6	QMF2118	Fast Forward Arm Bracket
M 7	QML3581	Sub Control Lever
M 8	QML3583	Main Control Lever
M 9	QML3584	Record Reverse Lever
M 10	QML3586	Head Base Plate Lift Lever
M 11	QML3594	Auto-Stop Release Arm
M 12	QML3603	Erase Safety Lever
M 13	QML3604	Auto-Stop Driving Lever
M 14	QML3605	Auto-Stop Detection Lever
M 15	QML3592	Change Lever
M 16	QMR1820	Record Rod
M 17	QMR1821	Auto-Stop Connection Rod
M 18	QMR1822	Eject Rod
M 19	QMR1824	Control Rod
M 20	QMZ1239	Flywheel Thrust Retainer
M 21	QBC1357	Lock Pin Pressure Spring
M 22	QBT1682	Auto-Stop Connection Rod Spring
M 23	QBT1894	Main Lever Spring
M 24	QBN1739	Selection Lever Spring
M 25	QBN1742	Pressure Roller Release Spring
M 26	QBN1744	Sub Gear Spring
M 27	QBN1802	Main Gear Spring
M 28	QBN1746	Auto-Stop Lever Spring
M 29	QBN1747	Connection Spring
M 30	QBS1128	Lock Pin
M 31	QBC1372	Reel Table Spring
M 32	QBW2008	Poly Washer 2φ
M 33	XUB4FT	Stop Ring 4φ
M 34	XUB3FT	Stop Ring 3φ
M 35	QBW2012	Poly Washer
M 36	QXL1354	Sub Lever Assembly
M 37	QXL1355	Main Lever Assembly
M 38	QML3582	Pause Lock Lever
M 39	QBT1896	Lever Release Spring
M 40	QXL1381	Pressure Roller Assembly
M 41	QBN1743	Pressure Roller Spring
M 42	QML3588	Fast Forward Lever
M 43	QBN1748	Fast Forward Spring
M 44	QMA4063	Flywheel Retainer
M 45	QMA3920	Detection Lever Angle
M 46	QMS2546	Detection Lever Shaft
M 47	QMF1682	Switch Retaining Plate
M 48	XSN2+6	Screw ⊕2×6
M 49	QXF0164	Flywheel Assembly
M 49-1	QBW2049	Poly Washer
M 49-2	QBW2026	Washer
M 50	QXD1143	Takeup Reel Table Assembly
M 51	QXL1382	Idler Lever Assembly
M 52	QXi0111	Takeup Idler Assembly
M 53	QBT1893	Takeup Idler Spring
M 54	QXi0113	Fast Fowrard Idler Assembly
M 55	QXi0112	Rewind Idler Assembly
M 56	QXL1383	Fast Fowrard Arm Assembly
M 57	QMK1840	Head Base Plate
M 58	QMZ1241	Head Spacer
M 59	QBN1740	Head Pressure Spring
M 60	QBC1278	Head Spring (for Record/Playback Head)
M 61	QBCA0008	Head Spring (for Erase Head)
M 62	QML3591	Brake Arm
M 63	QMZ1240	Sub Head Base Plate
M 64	QMN2550	Roller
M 65	QDK1017	Steel Ball 2φ
M 66	QBP1873	Head Base Plate Pressure Spring
M 67	QBT1597	Brake Arm Spring
M 68	QBT1892	Head Release Spring
M 69	QMA3858	Head Adjustment Plate
M 70	QZL0241	Takeup Gear Assembly
M 71	QXU0170	Motor Assembly
M 72	QXK2286	Sub Chassis Assembly
M 73	QDG1199	Auto-Stop Gear
M 74	QDG1200	Cam Gear
M 76	QDB0281	Capstan Belt
M 77	QDB0274	Takeup Belt
M 78	QDB0273	Fast Foward Belt
M 79	QXL1360	Record/Playback Selection Arm
M 80	QML3580	Record/Plaubback Selection Lever
M 81	QBT1895	Record/Playback Selection Lever Spring
M 82	QXP0607	Fast Forward Connection Pulley Assembly
M 83	QMK1838	Upper Base Plate
M 84	XSN3+5S	Screw ⊕3×5
M 85	QDP1828	Fast Forward Pulley
M 86	QXH0357H	Chassis Cover Assembly
M 87	QXC0079	Tape Counter
M 88	QDB0207	Counter Belt
M 89	QMAM0150	Counter Angle
M 90	XWC26B	Washer 2.6φ
M 91	XSN26+6	Screw ⊕2.6×6
M 92	XTN2+6B	Tapping Screw ⊕2×6
M 93	XTN26+6B	Tapping Screw ⊕2.6×6
M 94	XTN26+10B	Tapping Screw ⊕2.6×10
M 95	XTN26+12B	Tapping Screw ⊕2.6×12
M 96	XTN3+10	Tapping Screw ⊕3×10
M 97	XTN3+24	Tapping Screw ⊕3×24
M 98	XSN26+3	Screw ⊕2.6×3
M 99	XSN2+10	Screw ⊕2×10
M 100	QBN1741	Change Lever Spring
M 101	XWG2	Washer 2φ
M 102	QML3644	Tape Detection Lever-A (for Metal Tape)
M 103	QML3645	Tape Detection Lever-B (for CrO_2 Tape)
M 104	QBW2085	Poly Washer
M 105	XTN26+6BFZ	Tapping Screw ⊕2.6×6
M 106	QWY4122Z	Record/Playback Head
M 107	QWY2138Z	Erase Head
M 108	QTD1001	Lug Terminal

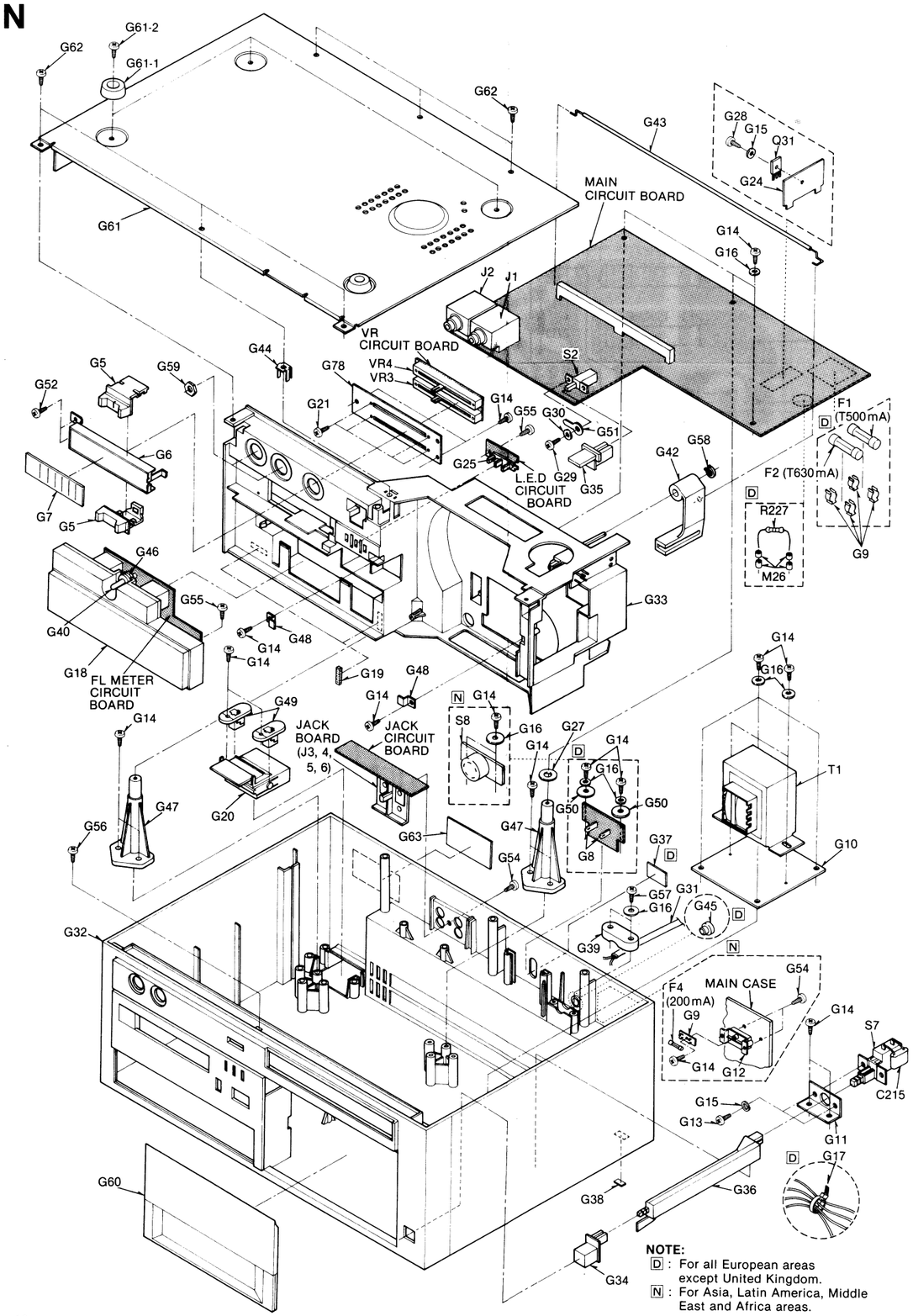
CABINET



CABINET PARTS LOCATION







NOTE:
D : For all European areas except United Kingdom.
N : For Asia, Latin America, Middle East and Africa areas.

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.

Ref. No.	Part No.	Part Name & Description
	CABINET PARTS	
G 1	QKFM6007K	Cassette Holder
G 2	QBP1899	Spring (for Cassette Holder)
G 3	XSN2+5	Screw ⊕2×5
G 4	XNG2E	Nut 2φ
G 5	QYK0141	Knob (Input Level control) "Silver Type"
	QYK0141S	Knob (Input Lebel Control) "Black Type"
G 6	QGG0201	Guide (for Input Knob)
G 7	QGBM0023	VR Indicate Plate "Silver Type"
	QGBM0023K	VR Indicate Plate "Black Type"
G 8 [D]	⚠ SJT777	Terminal [For all European areas except United Kingdom]
G 9 [D]	⚠ QTF1054	Fuse Holder [For all European areas except United Kingdom]
[N]	⚠ QTF1051	Fuse Holder [For Asia, Latin Aamerica, Middle East and Africa areas]
G 10	QMFM0016	Transformer Holder
G 11	QMAM0123	Angle (for S7)
G 12 [N]	QKJM0086	Fuse Holder Angle [For Asia, Latin Aamerica, Middle East and Africa areas]
G 13	XSN3+6S	Screw ⊕3×6
G 14	XTN3+10B	Tapping Screw ⊕3×10
G 15	XWA3B	Washer 3φ
G 16	XWG3	Washer 3φ
G 17 [D]	QTD1315	Cord Clamper [For all European areas except United Kingdom]
G 18	QSL2010RNM	Level Meter "Silver Type"
	QSL2012RNM	Level Meter "Black Type"
G 19	QBMM0020	Cushion (for FL Meter)
G 20	SJS9607	Direct Connector
G 21	XSN2+3	Screw ⊕2×3
G 22	QDG1102	Gear (for Cassette Holder)
G 23	QBW2082	Washer
G 24	QTHM0011	Heat Sink
G 25	QBKM0029	Spacer
G 26 [D]	QZE0003	Porcelain Tube [For all European areas cxcept United Kingdom]
G 27	QBKM0031	Washer
G 28	XSN3+8S	Screw ⊕3×8
G 29	XSN2+4	Screw ⊕2×4
G 30	XWA2B	Washer 2φ
G 31 [D]	⚠ SJA88	AC Power Cord [For all European areas except United Kingdom]
[N]	⚠ RJA52ZBK	AC Power Cord [For Asia, Latin Aamerica, Middle East and Africa areas]
G 32	QKMM0042S	Main Case "Silver Type"
	QKMM0042K	Main Case "Black Type"
G 33	QKJM0076	Mechanism Chassis
G 34	QGOM0086	Push Button (Power)
G 35	QGOM0087	Push Button (Dolby)
G 36	QKJM0046	Power Button Rod
G 37 [D]	QGKM0182	Switch Shelter "Silver Type" [For all European areas except United Kingdom]
[D]	QGKM0182K	Switch Shelter "Black Type" [For all European areas except United Kingdom]
G 38	QGBM0027	Caution Plate (for Fixing Pin) "Silver Type"
	QGBM0027K	Caution Plate (for Fixing Pin) "Black Type"
G 39 [D]	QTD1164	Cord Clamper [For all European areas except United Kingdom]
[N]	QTD1129	Cord Bushing [For Asia, Latin Aamerica, Middle East and Africa areas]
G 40	XAMQ23P300N	Pilot Lamp (12V 0.05A)
G 41	QBN7008	Spring (Cassette Holder)
G 42	QMLM0041	Recording Lever
G 43	QBSM0007	Recording Wire
G 44	QTSM0045	Earth Plate
G 45 [D]	QBJ1425	Cord Bushing [For all European areas except United Kingdom]
G 46	QBG1366	Rubber Cushion
G 47	QKJM0079	Angle (for P.C.B)
G 48	QMAM0129	Stopper
G 49	QKJM0077	Socket Plate
G 50 [D]	QBK7178	Washer [For all European areas except United Kingdom]
G 51	QTD1317	Lug Terminal
G 52	XTN26+8B	Tapping Screw ⊕2.6×8
G 53	XTN26+6B	Tapping Screw ⊕2.6×6
G 54	XTB3+10BFZ	Tapping Screw ⊕3×10
G 55	XTN3+8B	Tapping Screw ⊕3×8
G 56	XTN3+12B	Tapping Screw ⊕3×12
G 57	XTN3+16B	Tapping Screw ⊕3×16
G 58	XUB5FT	Stop Ring 5φ
G 59	QNQ1070	Nut (for J1, 2)
G 60	QYFM0065	Cassette Lid Assembly "Silver Type"
	QYFM0065K	Cassette Lid Assembly "Black Type"
G 61	QYBM0046	Bottom Cover Assembly
G 61-1	QKA1083	Rubber Foot
G 61-2	QHQ1313	Step Screw
G 62	XTN3+10BFN	Tapping Screw ⊕3×10
G 63 [D]	QGSM0186	Main Name Plate [For all European areas except United Kingdom]
[N]	QGSM0188	Main Name Plate [For Asia, Latin Aamerica, Middle East and Africa areas]
G 64	QXL1493	Lever Assembly "Silver Type" (with Eject Button)
	QXL1581	Lever Assembly "Black Type" (with Eject Button)
G 65	QXL1494	Lever Assembly "Silver Type" (with REC Button)
	QXL1582	Lever Assembly "Black Type" (with REC Button)
G 66	QXL1495	Lever Assembly "Silver Type" (with REW Button)
	QXL1583	Lever Assembly "Black Type" (with REW Button)
G 67	QXL1496	Lever Assembly "Silver Type" (with FF Button)
	QXL1584	Lever Assembly "Black Type" (with FF Button)
G 68	QXL1497	Lever Assembly "Silver Type" (with Play Button)
	QXL1585	Lever Assembly "Black Type" (with Play Button)
G 69	QXL1498	Lever Assembly "Silver Type" (with Stop Button)
	QXL1586	Lever Assembly "Black Type" (with Stop Button)
G 70	QXL1499	Lever Assembly "Silver Type" (with Pause Button)
	QXL1587	Lever Assembly "Black Type" (with Pause Button)
G 71	QXA1044	Angle Assmbly (for Operation Button)
G 72	QMR1823	Rod (for Lever Obstraction)
G 73	QML3593	Lever (for Lock)
G 74	QBP1875	Spring-A (for Obstraction Rod)
G 75	QBT1597	Spring-B (for Obstraction Rod)
G 76	XTN2+6B	Tapping Screw ⊕2×6
G 77	QMN2554	Shaft (for Operation Button)
G 78	QMFM0019	Angle (for VR3, 4)
	ACCESSORIES	
A 1	SHE135	Fixing Pin "Silver Type"
	SHE135-1	Fixing Pin "Black Type"
A 2 [D]	QQT3413	Instruction Book [For all European areas except United Kingdom]
[N]	QQT3414	Instruction Book [For Asia, Latin Aamerica, Middle East and Africa areas]
A 3 [N]	⚠ QJP0603S-1	AC Plug Adaptor [For Asia, Latin Aamerica, Middle East and Africa areas]
	PACKINGS	
P 1 [D]	QPNM0196	Inner Carton [For all European areas except United Kingdom.]
P 1 [N]	QPNM0195	Inner Carton [For Asia, Latin America, Middle East and Africa areas.]
P 2	QPAM0052	Cushion
P 3	XZB40X50A02	Poly Sheet (for Unit)
P 4	QPQ1052	Poly Sheet (for AC Power Cord)
P 5 [D]	QPSM0009	Pad [For all European areas except United Kingdom]

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